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Clinical Lectures.

THE LIMITS OF THE ART OF HEALING.*

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Honored Assemblage:—Death, disease, and bodily sickness of many kinds—this is the inheritance of suffering mankind. The powerful desire for life, the striving towards a painless existence, and the intense longing for health stand in opposition. To the existence of these two opposing facts, the art of healing owes its origin.

Mankind has become submissive to the inevitable existence of death itself. No one to-day, thinks of exacting such a requirement of medicine as an immunity from death. To be sure, why we must die at all, why even in the most healthy subjects the mechanism of our organism must cease its activity after eighty or perhaps a hundred years of work, these are questions which science can only answer very unsatisfactorily. Processes of material changes of any kind, either in the cells or organs, causing a weakening of their functions which are necessary for the maintenance of life, these are the causes. But the true "how" and the final "why" of these destroying processes still await explanation.

Standing, as we do, powerless before death, that unchangeable law of nature, the desire to prolong the life of each individual to its greatest possible limit, is easily understood. That disease shall not prematurely end life, that those distur-

bances connected with or following diseases shall be annulled or mitigated, these are the requirements which are demanded of medicine.

"The great and small world studies it through and through, only in the end to let the outcome be as god wills it," was the Mephistophelic ridicule regarding the real capabilities of medicine. The term "ignoramus" can be applied to the foremost scientist of to-day, as he stands before the most recent riddles of the human life—riddles, indeed, that form so large a component of the questions of theoretical medicine. But thousands of varied forms of misery are present with us, and in the hour of danger the sick call for help, and the suffering crave for relief from pain.

How far, in its practical application, does the science of medicine fulfil the foregoing requirements?

Where are its limits, and by what are these limits determined?

What is its outlook for further growth and usefulness?

The fact, that the practical art of healing has made great advances during the last century, and more especially during the latter half of the century, needs no elucidation. The rebuilding of pharmacology, the brilliant advances in ophthalmology, the remodelling of laryngology, and the astounding growth of operative surgery and gynecology—in the field of internal medicine, the introduction of a large number of efficient medicinal substances, and of physical curative methods, and further the recognition of the value of physiological, dietetic, and hygienic factors of the most varied kind—all these have been factors in making this a noteworthy epoch. Then, the immortal discovery of Lister, and Pasteur's discovery of the curability of the dreaded hydrophobia, and not a year since the contributions of Koch that have awakened the

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highest and most intense enthusiasm, all these facts give additional importance to the question: where are the limits of the art of healing? We do well indeed to always strive towards a greater and always greater enlargement of these limits, and to hope for continued growth. It is a duty to strive towards such an end. But for the investigator, it is necessary for him to only see facts, and be uninfluenced by sentiment, and then, after quiet consideration to sum up not only the attained, but also the attainable.

"To be sick, is life under altered conditions," is the definition of the great reformer in medicine, our master and leader, Virchow.

What then, is healing?—To effect pathological changes in the organism—be these of a chemical or physical nature—in such a manner, that they are brought to a standstill, the changed tissue rendered histologically normal, and the altered functions rendered physiologically normal; to restore the proper relations between the tissues; to bring about a healthy condition of all the functions of the entire organic system—this is healing.

In what measure is the art of healing capable of fulfilling these requirements? If we endeavor to answer this question with the facts at hand, we find that the short hour given us for this lecture will only allow the answer to be a very fragmentary one. Yet this even will be sufficient for us to formulate some conclusions.

As paradigm we will let serve a condition which belongs to the most frequent occurrences—interruptions of continuity by external violence, either accidental or operatively designed. These are, as every one knows, curable. But the limits of the art in this case consist in the greatest technical skill in the apposition of the divided surfaces, and the keeping away of anything that would be likely to act harmfully upon the process of healing; but upon the process of healing itself—upon the organic reunion of the divided surfaces—all these precautions have no influence. The exudation of plasmatic lymph, the processes of growth and regeneration in the cells of the injured tissues—all these occur uninfluenced by us. We are astonished, and justly astonished, at the gigantic advance of operative surgery since Lister's introduction of the principles of antiseptics, and we may well bless the name of the man who

has rendered it possible to save the lives of countless sufferers, by operative treatment, and to restore them to health. Yet, we must clearly understand that this advance only consists in the fact that by means of the protection afforded by antiseptics, allowable surgical procedures can be maintained in a condition which renders healing possible. But the healing itself occurs by means of processes that are beyond our control. Naturally the extraordinary practical value of the improved operative methods, which our surgeons have discovered, cannot be here taken into consideration, and for the patient while this is of vast importance, it is not so when viewing the matter from a scientific and logical standpoint. It must be understood that *healing* in the sense that our art controls by antiseptics the organic processes, is not affected even by the gigantic practical advances made in consequence of its application. We can cure, or cause the healing, of an ulcer or abscess no more to-day than we could formerly. Excision, or opening, of such is not synonymous with true healing. As it is with the superficial interruption of continuity by force (operations), so it is with internal processes under similar conditions. In ulcerations of the stomach or intestines we can influence healing in so far as to remove the causes of danger, but we do not restore the lost tissue.

In the rupture of a blood-vessel or the injury of cerebral substance, it is, of course, necessary by means of suitable methods to check the congestion in the brain, but none of our methods will remove the clot, or reunite the divided nerve substance.

Let us choose another very common process—inflammation. The long series of clinical pictures, now acute and now chronic, which occur in the most varied organs and tissues, and are all classed under the head of "inflammations" because analogous pathological processes and tissue changes exist in all and can heal, as daily experience teaches us—the acute processes frequently, the chronic more rarely. What part does therapeutics play in this healing?

In acute inflammatory processes—as our knowledge of to-day teaches us—there is no internal medicament of direct value; only indirectly in special cases can such remedy be of value, as for example, digitalis in pericarditis and myocarditis; or symptoms

atically, as the majority of remedies in acute catarrhs. Our therapeutic possibilities consist in very ancient possessions of medical science, which for centuries were used to excess, then in part completely abandoned, and at the present used with varying frequency. Rest, cold and local blood-letting form the ground-work of a treatment for acute inflammations, which under certain circumstances is helpful. But how frequently is such treatment worthless; how often not applicable! Think only of all the deep inflammations, the inflammations of the mucous membranes; think only of all the cases where the process occurs with great intensity independent of specific forms, such as the tuberculous or the pneumonic. In these even we are far from having satisfactory proofs that the procedures referred to, even in cases where under their application the inflammatory symptoms subside, have any direct influence upon the pathological processes of inflammation themselves. True it would seem so, but the fact has been in no way satisfactorily elucidated.

As it is with the acute, so it is also with the chronic inflammatory processes. We may be able to influence recovery in certain favorably located forms—such as chronic inflammatory exudation in a joint, inflammatory thickening of a muscle, or perineuritic swelling of a reachable nerve, by massage, gymnastics, electricity, hydrotherapy, various baths, and counter-irritation; these are our aids. But of all these it can only be said that they “excite absorption.” We possess no drug that effects a cure by directly influencing the organic processes incident to such a cure. This must not be regarded as a mere “dialectic difference,” for to the patient it is entirely immaterial whether the massage or counter-irritation have acted directly or indirectly, so long as he is relieved from his long-standing perineuritis. But how is it with the application of similar remedies in neuritis of the trigeminus or optic nerve? Cure, in the true sense of the word, can only occur in a case of perineuritis when we are able to effect a restoration of the histological changes of the nerves which have taken place. The same must be said of chronic inflammations of the mucous membranes, and parenchyma of the organs. In the most favorable cases, we are in a position by

means of baths and “cures,” dietetic and general hygienic regimen, or well as certain pharmaceutical preparations to influence certain symptoms, as to remove the product of the disease; yet the process of the disease in itself we do not influence.

But why should I tax your patience with the presentation of an endless list of unities? Why go into a description of the processes of degeneration and atrophies as they are met with in the different tissues and organs and give rise to the most varied clinical features; why enter into a description of the many diseases of the blood, and diseases accompanied by tissue change, or discuss the vast array of the various disturbances, either anatomical or functional, of the nervous system? Why discuss the thankless efforts for the cure of foreign growths (I do not mean excision, but “cure,” in the sense defined above), which at present offers as good chances for ultimate success, as does the bottom of the Kamtschatka River for raising the date palm? In every instance, so soon as we come to regard the matter in its true inwardness, we are confronted by similar evidence, and arrive at the same results which our reasoning led us to in discussing interruptions of continuity and inflammatory processes.

Only one group of diseases can hold our attention for a moment longer, since great interest is linked with it. I refer to the group of acute and chronic infectious diseases.

Typhoid fever, scarlet fever, measles, and the vast list of morbid diseases of this group, and even sepsis can be cured. Far am I from denying that the art of medicine can aid most materially in influencing a favorable result in these cases, both by combatting the dangerous symptoms, as well as by means of general hygienic methods and dietary precautions. But is our art in a position to directly influence the process of the disease and so effect a cure? Our knowledge is so humilatingly small that out of this enormous list of diseases we can only truthfully answer yes to this question in regard to two or three; these are in malaria, syphilis, and perhaps acute rheumatic polyarthritis, or perhaps even in these cases would we not do better by tempering our answer with the reservation that it at least seems to be a fact? It would almost seem so to me, as

the course of malaria, even after two hundred years of the pride of practical medicine would show. Then, in acute articular rheumatism, of its true being we know nothing, and while the salicylic acid treatment indeed causes a disappearance of the fever and articular affection, yet it has no influence upon the danger of subsequent endocarditis and its dreaded sequella, valvular diseases. And so, in all other infectious diseases—so soon as they have become well developed we cannot even to-day produce a cure in the truly scientific acceptance of the term. Wherever we may turn, we are confronted with apparently impassible barriers forming the limits of our art.

Let us endeavor, from the confusing mass of unities, to deduct some general conclusions regarding the limits of healing and curability.

Healing or cure is only possible so long as a disease is still in its course; so soon as it has reached a definite end, cure is no longer possible. There remain changes, atrophies, hypertrophies and other sequelæ of varied natures. In the commonest cases these changes are unaffected by therapeutics or regeneration although they may perchance be amenable to mechanical methods or the knife of the surgeon. An acute pleuritis is curable; the results left by it in the form of pleuritic adhesions cannot be cured. Acute endocarditis may disappear, but the valvular insufficiency caused by it cannot be cured. Anomalies in change of substance which lead to the formation of renal gravel, may be checked at the outset, but the formed stone can only be removed by the surgeon. An ulcer at the cardia of the stomach can heal, but the cicatrix left and causing stenosis, can at best only be excised.

The possibilities of therapeutic influence are in many cases determined by the location of the disease. An aneurism if situated at an artery of the extremities can be rendered harmless, but will cause fatal hæmorrhage if located in the aorta or arteria basilaris cerebri. An abnormal development of fat can be checked if it is confined to the superficial parts of the body, but it will finally end in death if the heart muscles become involved.

Of almost equal importance in the question of curability is the nature of the occurrence of the disease; whether its cause develops suddenly or gradually, with great

intensity or not. The same amount of arsenic that under ordinary circumstances would be unfailingly fatal, is well tolerated by the accustomed arsenic eater, cholera or epidemic cerebro-spinal meningitis may attack two similarly constituted individuals; in the one causing death after a rapid and severe course, and in the other ending in recovery after a comparatively slight illness.

A disease becomes incurable when its causes continue without interruption.

Malaria will in the end most certainly cause death if the infected person does not leave the poisonous swamp-lands that constitute his home.

Bronchial catarrh remains stationary, and will finally end in causing a disease of the parenchyma, a disease of the lungs, if the patient remains under the influence of the possibly dust-laden atmosphere.

In similar suddenness and intensity of a disease cause, and by similar extent of the local development, the individual power of resistance, or especial constitution of the subject is of great weight. The same inflammation of the lungs, which a strong man thirty-years old, can live through, will end fatally in an aged subject, a heavy drinker, or one who has been enfeebled by a dissolute life or long previous illness.

Finally, *crimen non est artis sed aegrotæ*. With this sentence a long series of cases must be characterized, in which every medical or scientific aid is unavailing, while theoretically of little use to us in answering our question yet in actual fact they have considerable weight. Under the most favorable conditions the most efficient methods fail in effecting a cure, either because he does not or cannot conform to them. The most active treatment will not relieve the smoker of his pharyngeal catarrh so long as he continues to smoke. In this respect we are forcibly reminded of the nervousness and neurasthenia so common in our times. Lack of fore-sight or will-power in such cases prevent frequent possible cures; often to be sure, also, the power of external influences, which keep the unfortunate subject so long under the ban of circumstances until every therapeutic endeavor comes too late to be of any value except as a passing relief, but cure can no longer be effected.

Any ailment that does not fall under one of these categories is, in principle at

least, curable. The actual cure of such is the question of the times, in our minds. As remarkable as such a statement may appear at the present condition of our capabilities, we see no reason why the true curability of malignant growths should always be an impossibility.

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The following we must now acknowledge is as an undeniable fact: the actual healing or cure, the restoration to a normal condition of function and tissues, changed either chemically or physically by diseases, can only be effected by living processes in the organism. Now, the answer to our question regarding the limits of our art, is dependent upon the extent to which it is, or will be, able to influence these processes, and to determine whether or not it may extend the limits of its capabilities. And if it is shown that it can not do this or at best only in a very limited manner, then the second question comes, whether its usefulness is here at an end, or whether other possibilities are not open to it, constituting a high end for it to strive for.

With certainty can we say, that certain pathological changes stand as insurmountable barriers before even the most advanced science. Never will we be able by means of our art to restore lost cells or cause the reunion of what has been divided, never will we be able to directly influence the ganglia cells and train of associations that plays the real part in the manifestations of hallucinations.

True, by means of the exhibition of certain substance we are able to effect changes in the protoplasm of certain cells thus giving rise to certain physiological effects, although how this is accomplished is not understood. Many of the alkaloids act in this way: alcohol, ether, chloroform, bromine, curare, digitalis, and many other drugs act directly upon the substance of certain groups of ganglia-cells, as well as nerve and muscular fibres; pilocarpin, arsenic and iodine act upon certain glandular cells; phosphorus upon the process of growth in the bones.

When we come to analyze the cases known at present, however, how do we find it applicable to successful therapy? Bromides check epileptic convulsions for a limited period, but they do not affect the processes in the central nervous system.

Alcohol in measured doses stimulates for a time the action of the brain and heart, but does not act in a curative manner in any of the pathological conditions which may have rendered its exhibition necessary.

Morphine relieves the pain of neuralgia, but does not relieve the changes that cause the same. Digitalis relieves passingly the insufficiency of the cardiac muscle, tachycardia and arrhythmia, but does not prevent their recurrence, neither does it restore to normal the fine or coarse anatomical foundations of these conditions.

The nearest approach to true cure or healing which we are able to produce by means of drugs, is seen in the action of iodine upon gumma and enlarged thyroid gland; but even here we must acknowledge that the true nature of the disease is entirely unknown to us. Even in the most favorable cases of unquestionable specific influencing of the diseased tissue in such a manner that the processes leading to recovery must be directly ascribed to the remedy, still, the receding of the disease in the true sense of the word is effected by the organism itself. To be sure, if circumstances analogous to those attending the action of iodine in enlargements of the thyroid were more frequent, the art of healing would be brought nearer to its ideal. Yet how pitifully few are these up to the present day! Whether or not we shall reach a goal by a similar train of thought which led our renowned Robert Koch to institute his experiments with tuberculin, clinical experience must show. Possibly the art of healing is destined to advance in this direction—at all events it forms a noble work of research, worthy of our highest endeavors. First of all, and even more with our advancement of knowledge, we must come to understand that the physician is only the servant of nature and not her master. Although, however, our outlook and possibilities may at present be very limited, yet this should offer no discouragement or cause us to give up our work without further endeavors. If Science cannot master Nature, it can at least follow faithfully, observing its mysteries. The warning sounded in the foregoing sentence gives the key to the secret of the success of truly great physicians.

We must carefully investigate and confirm the development, nature and results

of morbid changes, and also under what conditions and by what processes the human organism is capable of withstanding or recovering from these disturbances, and when possible in a suitable manner to cause or assist these processes, or to imitate them, and above all to do no harm. This is the way in which the art of healing can accomplish great and good ends. History shows most conclusively that parallel to the advance of our knowledge of scientific methods, our capabilities at the sick-bed have also advanced. Isolated exceptions prove nothing against this assertion. The exceptions are accidents, and we cannot count on accidents when we are endeavoring to extend the limits of our art.

Allow me, by the way of illustration, to quote one example. A cardiac valvular insufficiency as such we can never cure. How is it then, that in spite of the necessary change of circulation, accompanying such an insufficiency, the patient may live for years in apparent health and capable of work? The compensatory hypertrophy of a certain part of the heart is the cause of this, and the life-retaining hypertrophy itself is the physiological sequel of the above change of circulation. When this is recognized, and when we further have recognized that the extent of the hypertrophy corresponds in degree to the change of circulation which has caused it, and which it relieves, we may deduct the following, with reference to the art of healing: First, no effort should be made to check the development of this hypertrophy, as formerly used to be done; second, everything that might tend to hinder the development of this hypertrophy must be removed or kept away; third, we must not endeavor to excite the stronger action, by excitants, whatever they may be, so long as the condition of compensation remains. The organism has done its work, and our hands must not destroy or disturb it.

I will refrain from any further reference to any special instances, by which it may be seen that medicine of to-day, without being able to directly affect the process of the disease, by simply following the rule laid down above, viz., of watching and aiding the natural processes of restoration of the organism itself, can accomplish more in this way than by any other means. We have been taught above all things not to

disturb the course of natural restorative processes. On the contrary medicine should endeavor to place the organism in a position which will enable it to vanquish the pathological process, either by dietetic, hygienic or climatic influences, or by a methodical stimulus to the material changes in the nervous system. The most careful and helpful assistance and watching—suited to the conditions, and our knowledge of the processes of the disease—designed always to aid the natural restorative and healing processes, this forms one of the paths in which we may tread in seeking to broaden the usefulness of our art.

With the knowledge that already developed pathological processes can only be influenced by our art to a limited extent, or perhaps not at all, medicine has recently entered upon an entirely new field of labor, from which it already reaps a blessed and costly harvest. And in fact, since in many cases we are not, and will not, be in a position to influence the results of disease in the organism, it becomes all the more our imperative duty to guard against the occurrence of the same, to recognize the cause of the disease and to render it harmless.

This duty should, however, be accepted in the fullest sense; not alone in the guardance against infectious diseases, and this again not alone in the enforcement of sanitary laws. The success of this work has caused us very commonly to ascribe a curative action to its influence, while in point of fact none such exists. By closely examining the fact, it will be seen that the results are obtained not by a process of cure in the scientific sense, but by a distinction of the cause of the disease.

When a potash solution which has been swallowed, has been immediately neutralized by the exhibition of vinegar or when the *acarus scabiei* has been killed by any local application, any one will understand that this is naturally only a removal of the harmfulness of the exciting cause of the disease, not a cure for the gastric lesion or cutaneous affection. But we must go much further in this line of argument; the curative action of many so-called specific remedies becomes subject to the same limitations. So the treatment of malaria with quinine must be, to all appearances, regarded as aetiological treatment. The

changes in the blood-corpuscles and in the spleen are not cured or restored by the alkaloid, but the plasmodia of malaria are in some way killed and the process of the disease in the tissues stopped.

As the acid renders the alkali harmless, thus removing the cause of disease, so does quinine render the plasmodium in the blood harmless.

The hope is by no means unjustifiable that in the near or perhaps more distant future, such a destruction of the exciting causes of the disease may be possible by means of the employment of specific remedies in other infections. After the destruction of the course of the disease, the nature process of healing can effect a cure of the existing disturbances: in typhoid fever, the intestinal ulcers; and the bronchitis in whooping cough. It is possible that advance in this direction may occur by accidental discovery, as was the case with quinine in malaria and salicylic acid in rheumatism. All the same, the opinion is not without good foundation that methodical investigations in this line may also be fruitful of success. And although the battle of opinions still wages here or there, and although many of the results as yet obtained, are only applicable to the diseases as found in animals, yet there is no real reason why the same results should not be reached in the disease as it appears in the human organism.

The most noteworthy endeavors of the present, move in three directions: the healing of bacteriological diseases that already have advanced as far as clinical manifestations; to render harmless infections still in the incubation period; to guard against infections, or rather to prevent their occurrence.

The last named effort has been the one most advanced. It can accomplish its results by two different means. The one consists in the application of sanitary precautions against infection. It is very clear that the value of these precautions, their establishment and maintenance, becomes greater with the advance of our scientific knowledge. Cholera may be remembered as a good example. The other possibility is to prevent infection by rendering the individual organism immune. An unparalleled example of this may be seen in the precautionary inoculation, or vaccination, against small-pox. The result was reached by the simple clinical observa-

tions of the English physician whose name millions have already lauded in gratitude. To cause immunity by artificial precautionary inoculations, forms a scientific fundamental principle occupying a foremost position in the advancing tide of research. Whatever favorable results it may ultimately obtain, the following is practical and clear: Even if we come to the possession of advanced methods in this line, we will only attempt preventive immunization in the case of such diseases of an infective nature, that affect the majority or at least many individuals and to the danger of which they seem most liable. So besides small-pox and possibly scarlet fever, would come under this category besides these, also whooping cough, pneumonia, diphtheria, typhoid fever and the epidemics most prevalent at the present time, including cholera, influenza, typhus, etc. Naturally geographical conditions would alter or modify this list. On the contrary, for many patent reasons, it is highly improbable that general preventative inoculations will ever be undertaken in such diseases as hydrophobia, anthrax, and tetanus. Such an advance would to-day seem rather visionary, but the possibility exists and we are already close to its fulfillment.

The second endeavor, namely, that of rendering harmless an already existing infection (which, however, is still in the period of incubation) has an existing paradigm in Pasteur's inoculation in hydrophobia. The number of this class of cases will of necessity always remain limited. The cause for this limitation is very apparent. In hardly any case can this period of the disease (the incubation period) be recognized at all, or can it be recognized whether the pathogenic germs have entered into the human organism or not. How may we determine, in the case of a perfectly healthy man, whether there are tetanus bacilli or the cocci of erysipelas in his system? We must have a tangible source before we can proceed, such as the bite of a rabid animal.

From a practical point of view, however, our endeavors will be in the direction of that goal, in which we will be able to find remedies that will render harmless the exciting cause of disease, even after the same has been clinically manifested. In what manner these remedies act, whether they act harmfully upon the mi-

croörganisms, themselves, whether they render their nutritive soil in the organism unfavorable to their further growth, or finally, whether they increase the withstanding power of the cells (phagocytosis, or otherwise)—all these are secondary to the practical results achieved. The goal is an exalted one, but this is no cause for impossibility of attaining it, and its attainment would be a brilliant triumph for the art of healing. To be sure, even after its achievement, it would be a mistake to imagine that death from any disease in question could always be avoided. Even in such a case the severity of the disease remains a potent factor in the possibility of recovery, as has already been referred to in another part of this address. A sudden overloading of the organism with large numbers of the exciting factors of the disease, an existing lack of withstanding power of the organism, the institution of the treatment at the time when the extent of the tissue changes render it too late to be of any value, since the natural process of restoration cannot occur—all these will act as limitations to its usefulness.

Naturally the duty of the preventing and removing the cause of disease to the utmost limits, holds good in the most varied conditions, only the results of such a course are rarely so evident as in the treatment of bacteriological diseases. Very frequently the cause of the disease is entirely removed from any possible therapeutic influence. This is the case in that frequently referred to affection, "cold," the importance of which is frequently absurdly over-estimated, but which in some cases cannot be denied. In many cases the cause is even now entirely unknown, as in renal atrophy (Schrumpfnieren) and leucæmia, as well as many other diseases. Or again, the cause may be in the patient's manner of life, social circumstances. To offer single examples of all these, would lead us too far.

Even the most important point I can here only touch upon most briefly, in the technical knowledge of which the power of the law and society itself must join hands in order to grasp strongly at the very foundation of the subject: I refer to the general maintenance and care of health.

And although our art is unable to effect healing by the impossibility of

effecting the natural processes at our will; and even when it finds narrow limits in the prevention of diseases, even granting that such might be the case, even then its field of usefulness is by no means exhausted. There still remains an open field of extreme value, namely, the treatment of disease symptoms. Out of the countless number of pharmaceutical preparations the majority are valuable in this respect, and apart from these the value of mineral springs, bath-cures, electricity and numerous other therapeutic aids. We must not under-rate the vast importance of this part of the art of healing.

For the sufferer it is frequently quite immaterial whether this or that functional change has taken place in his body, as long as he does not experience any trouble from the same, his capabilities for work not being lessened or his life shortened. Not this alone, but also something vastly more important. It is the symptomatic treatment alone that often creates the possibility for the natural process of healing or cure; it annuls those symptoms which are most dangerous to the life of the patient. Truly no one who has been a recipient of the successful treatment of a physician in œdema of the lungs or cardiac failure when the stamp of death has already been upon him, will think lightly of the value of symptomatic treatment. In this the art of healing is not only capable of great advancement but it is now rapidly making these advances in a most satisfactory manner.

While Griesinger only thirty years ago complained bitterly against the helplessness of the physician to reduce high fevers, we now, thanks to the cold-water treatment, and thanks to the discovery of a list of most energetic antipyretics, are able to keep the temperature of a patient suffering with typhoid fever, almost normal. Yet we no longer deceive ourselves as to the value of these proceedings. Antipyresis is only the relief of a symptom and then only questionably; the true process of the disease is not affected by it. Think of the number of hypnotics that have been given to us in the past four years—a welcome addition to the old king of hypnotics, opium. Then again the number of antiseptics; and pilocarpin, cocaine, diuretin, and many others. Equally fruitful has been the introduction of symptomatic curative methods. In this respect we need

only refer to the pneumatic apparatus and irrigation of the stomach.

"In all we see life and active work. Budding branches and ripe fruit!"

And in all this how humbly must we acknowledge our ignorance. Every human life that ends prematurely, every one whose life of usefulness is endangered by processes we cannot overcome; these show the limits of our lot. And what is more poignant, the knowledge that certain difficulties we may never overcome, certain limits never overstep, and never master the processes of life itself.

We would only desire to extend vastly the limits of our field of usefulness, and no matter how slowly we progress or how many set-backs we meet with, yet spurred onward with ardent enthusiasm, we look always toward that guiding star, in the light of which we seem to read that—

"To work in the service of mankind, Is the noblest duty of man."

PROLAPSE OF THE EXTREMITIES IN HEAD PRESENTATIONS.

J. Kaeser (*Centralbl. f. Gynäk.*, No. 2 1892), from a study of recorded cases, finds that prolapse of the extremities is far commoner in multiparæ than in primiparæ. The complication is favoured by hydramnion, contracted pelvis with previous heavy labors and twin gestation, since in these conditions the inferior uterine segment does not press on the head with firmness sufficient to prevent prolapse of the extremities. Prolapse of the arms is less serious than prolapse of the legs, but the cord often comes down as well in these cases, and that condition is very grave for the child. When the membranes are yet entire the obstetrician must wait till the os is completely dilated. Then the protruding extremity must be pushed up and the head brought well down by external pressure. After rupture of the membranes, manual reposition of the prolapsed member must be effected; if this proves unavailing and the head is movable, it will in many cases be advisable to turn. When the head is firm, reduction of the extremity should be cautiously attempted in the intervals between the pains. If this should fail, then according to the nature of the case in other respects, natural evolution may be awaited, or the forceps or perforator may be required.—*Brit. Med. Jour.*

Communications.

REFLEX URETHRAL AND GENITAL NEUROSES; URETHRAL NEURALGIA AND HYPERÆSTHESIA; HYPERÆSTHESIA AND NEURALGIA OF THE TESTES.

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There are a few morbid conditions of a functional character which, although oftentimes an integral part of organic diseases of the organs which it is my special province to consider, are occasionally either morbid entities or else the prominent source of complaint on the part of the patient, indeed we are apt to be more often consulted regarding these functional or nervous derangements than the diseases upon which they frequently depend.

There is, perhaps, no subject in the whole range of genito-urinary disturbances of greater importance than the varied phenomena involving nervous derangements that are due, directly or indirectly, to pathological conditions of the various portions of the urethral canal. It is certain, also, that in no class of cases which come under the observation of the genito-urinary surgeon, is an accurate diagnosis of greater importance, or more difficult to accomplish. I feel, therefore, that a contribution to the special study and treatment of such cases is, to say the least, warrantable.

When we consider the vast amount of labor and talent that have been devoted to the study of the reflex neuroses of the female due wholly or in part to pathological entities affecting the uterus and its appendages, it is certainly surprising that more attention has not been given to analogous conditions in the male due to disturbances of the generative organs and especially of the urethra.

Taking as our point of departure the prostate body, we will find quite a close similarity between some of its morbid conditions and those affecting the uterus. Physiologically, the prostate, or at least a portion of it, is the homologue of the uterus, there being the closest resemblance in the muscular structure of the two bod-

ies. If the muscular tissue becomes perverted in growth, we have in the one, uterine myoma, and in the other, prostatic hypertrophy, the structure of the two morbid processes being strikingly similar. When, as is occasionally the case, the "third lobe" of the prostate becomes so circumscribed as to form a distinct tumor, it is generally not unlike a pedunculated fibroid. It will also be found that certain remedies which have a pronounced action upon unstriated muscular fibre, have a somewhat similar action upon the prostate and uterus, this being especially true of *secale*, *ustilago maidis*, and *hamamelis*. Certain sedative remedies act very similarly upon irritative affections of the uterus or ovaries, and the prostate. To carry the argument a little further and directly approach the subject of neuroses, it will be found that certain irritations affecting the prostate, will produce effects quite like those produced by utero-ovarian irritation in women. False spermatorrhœa (spermatophobia) pseudo-impotency involving disgust for the sexual act, melancholia, hypochondria, neuralgias whether of the contiguous or remote nervous filaments, and nervous inhibition amounting to almost complete paresis, are all possible results of urethral or prostatic irritation, and these conditions are all represented by similar disturbances, such as hysteria and allied conditions in the female, due to morbid conditions of the generative organs. The analogy between the results of prostatic catarrh and those of cervical catarrh, as shown in one of the cases herewith reported, is sometimes especially striking.

One of the interesting features of stricture of the urethra, is the ensemble of symptoms of a nervous character that is so often seen, and which neuroses are frequently entirely disproportionate to the degree of organic trouble present. Cephalalgia, neuralgia in various localities, particularly sciatica, lumbar and intercostal neuralgia, are quite common, but are probably regarded by both physician and patient, as coincidences rather than as bearing any consequential relation to the stricture. Associated with these are others (quite as prominent in some cases) of a purely mental character, such as melancholia, hypochondria, disturbed sleep, incapacity for intellectual effort, and deterioration of business capacity, perhaps

associated with great irritability of temper. Disturbed digestion and general faulty nutrition are constant. That these various morbid conditions depend upon the stricture is never fully appreciated until that organic entity is cured, when the complete restoration to health demonstrates their true relation to the primary source of irritation. Many of my patients tell me that they had become so accustomed to their little ailments that they had come to consider them a matter of course and had never dreamed of their association with the stricture until the latter was cured. One of my patients remarked that he did not know how sick he was until he had been cured of his stricture.

Certain cases of gleet are associated with considerable mental depression which is commonly attributed to the moral effect of the supposed drain upon the system. This mental disturbance I believe to be in many instances the result of reflex irritation through the sympathetic system, which is so closely associated with the functions and nutrition of the sexual organs.

Morbid conditions of the urethra not only cause neurosis in other portions of the body, but they are often a reflex result of disease of contiguous structures; thus I have noted cases of spasmodic stricture dependent upon hernia and varicocele. Dr. Otis has described some very interesting cases of chronic spasmodic stricture of reflex origin. Operations about the anus are very often followed by spasmodic stricture and urinary retention. Morbid conditions of the anterior portions of the urethra often cause reflex disturbances of the deeper portion of the canal, or indeed, of the bladder. This is very familiar in connection with the results of contraction of the meatus.

One of the most annoying complaints which the surgeon is called upon to treat in connection with the genito-urinary apparatus, and especially in stricture, is neuralgia and hyperæsthesia of the urethra. This disorder is most often the result of long standing urethral inflammation, or stricture with its attendant gleet, and frequently persists long after organic disease has apparently been cured. The majority of patients who suffer from urethral neurosis of this kind are either of an emotional highly sensitive nervous organization

tion—often simulating “hysteria” in the male—or of a gouty temperament with highly acid and concentrated urine; anæmic and cachectic patients are especially liable to it if nervous or rheumatic. In such patients the imagination has been over wrought by the dread of serious results from urethral disease, and the mind depressed by a sense of self-degradation. The condition of the mind as well as that of the urethra has been impaired by long continued treatment of something which although trifling in itself perhaps, is to the patient, a terrible morbid entity, and a mental incubus from which he is never free except during the hours of sleep. Quack literature, irritating injections, over enthusiastic treatment, sexual starvation and excitement without gratification, are all disturbing elements in his case, and if we superadd the results of dissipation, intemperance and dietetic errors, what wonder is there that he never gets well, or that he magnifies the slightest unusual sensation about his sexual organs into something new, serious and startling. Such patients will say to us when we try to convince them that their gonorrhœa, gleet or stricture is practically well; “But doctor, I am not quite right. I have a funny feeling at this point in the canal,” or the complaint will be varied by a description of severe burning or cutting pains in the canal during micturition, or a tender spot usually near the meatus. Sometimes the pain radiates to the other portions of the sexual organs. On examination with the urethroscope, nothing appears which would account for the trouble; and treatment is usually of little avail, unless we succeed in obtaining the patient’s confidence and inducing him to believe that his trouble is not organic and will soon wear away—only too often however, he goes from surgeon to surgeon in the vain endeavor to find relief, until despairing and disgusted he resigns himself to what he considers inevitable fate and lapses into confirmed melancholy and hypochondria. Great irritability of mind alternating with depression and melancholia. Morbid states of the prostatic sinus and vesical neck with or without co-existing stricture occasionally give rise to urethral neuralgia; vesical calculus and tumors are especially liable to be complicated by it. Hyperæsthesia of the urethra is so often associated with stricture and gleet, that it is worthy

of consideration in every case in which obstructive spasm occurs during instrumentation; some canals will be found to be so hyperæsthetic that a chronic spasmodic condition exists. In some cases of chronic spasmodic stricture or urethrisms, local lesions of the mucous membrane exist, while in others nothing abnormal is to be detected.

Hyperæsthesia of the testicle, is an interesting condition which sometimes results from reflex irritation from stricture; more often however it is due to excessive sexual indulgence or the opposite extreme, i. e., ungratified and prolonged sexual desire. It is most apt to be associated with cachexia, gout, neurasthenia or anæmia. The testicle may be relaxed and soft, or full and firm to the feel. Oftentimes varicocele is present and acts as an efficient cause for the affection. Hypochondria, melancholia and various mental perversions of a delusional character are not unusual, and may perhaps be associated with a sluggish portal circulation or dyspepsia. Sudden deprivation of customary sexual indulgence is said by Curling to be a frequent cause.

The symptoms consist in extreme sensibility and tenderness either of the entire testicle or some spot upon its surface. So exquisitely tender is it that oftentimes the contact of the clothing and the various bodily movements cannot be borne.

Neuralgia of the testicle, is really an exaggeration of hyperæsthesia, and has in addition to hyper-sensitiveness, paroxysms of shooting cutting pain in the organ. The causes are much the same as for hyperæsthesia-syphilis, gout, and malaria having a prominent place in its ætiology. Urethral stricture quite often and prostatic and bladder disorders occasionally cause it. The pain is much like that of renal colic and is sometimes attended by retraction of the testis from spasm of the cremaster and the sick, faint feeling and cold perspiration characteristic of shock. I believe that some cases are really due to irritation of the renal pelvis and ureter by sharp crystals in the urine, and this acting reflexly produces pain in the testis. Usually only one testis is involved. As a rule the patient can walk about but in the severe cases he is apt to be greatly prostrated, and in addition he usually suffers from pain and soreness on movement.

The treatment of the neuroses which

have been presented consists in following some very plain indication as well as putting in practice numerous general principles. First and most important of all is attention to the patient's mental condition. His mind should be diverted from his physical ills, and at the same time kept free from all sources of sexual disquiet. Questionable literature and the society of loose woman must be avoided; in short, an attempt should be made to correct the impression so prevalent among men, that man's chief mission upon earth is the procurement of material wherewith to cloy his sexual appetite. *Once dispel the idea that his penis and testes constitute the axis around which his earthly existence revolves; and one will have done more for his patient than if he had fed him the entire contents of a drug store.* Having allayed sexual disturbances of a purely mental or moral character, it remains for us to secure for our patient physical sexual rest, it being sometimes a matter of nice judgment to determine whether moderation or strict continence is best for the patient's wellfare. In a general way it may be said that those neuroses which are dependent upon or complicated by actual inflammation, acute or chronic, demand absolute continence, while in those of a purely nervous character, moderation is to be advised. It is always a hard matter to determine the degree of success of our prescription in this matter, as the patient's penis is not only quite liable to gain the mastery over his reason and judgment, but over his morals as well, and he will therefore be apt to consider that a lie to his doctor, like Rip Van Winkle's drink, doesn't count.

Second only to sexual rest is the correction of urinary activity. This may be corrected by diet and remedies combined, the diet being by far the most important. The proper standard for a suitable diet is bread and milk, but this may be varied within narrow limits. Nitrogenized food, stimulants and tobacco must be strictly prohibited. As an adjuvant to this regimen, the Turkish bath does excellent service.

The best remedies to correct hyper-acidity of the urine, are the acetate and citrate of potassium, liquor potass, and in gouty or rheumatic patients (who are especially liable to neurotic symptoms from urinary disturbances) lithia, colchicum, and salicy-

lic acid. Mineral waters are very useful, the Buffalo lithia and Waukesha waters being especially useful. Several of my patients claim great benefit from partaking freely of the Garfield Park mineral waters.

Sedatives and anti-spasmodics are often useful in these cases, the following being of service in different cases, viz: potassium bromide, gelsemium, hyoscyamus, camphor monobromate, morphia, salixnigra and ergot. Tonics are often required, the best being the chloride of iron, strychnine, arsenic and quinine. In those rare cases of spasmodic stricture of malarial origin, quinine is of course a specific. Three very useful drugs are the phosphide and bromide of zinc, and the bromide of arsenic, these being great favorites of my own.

In many cases of urethral neurosis, surgical interference is required, thus a contracted meatus must be cut, a stricture dilated or cut, hernia or a varicocele operated upon or properly supported, etc. *The paramount indication from a surgical standpoint, is the relief of obstructive and inflammatory lesions of the genito-urinary tract.*

Cases of irritability and hyperæsthesia of the testes are by no means promising. The use of anodynes is ordinarily reprehensible as the disease is chronic in character and a narcotic habit may be readily acquired. If hygiene, the steel sound, the suspensory bandage and marriage do not cure, the case is apt to be hopeless. Galvanism and the application of ice bags are said to be of service. Castration is not to be thought of, but the idea suggests itself to me that in an obstinate case, stretching the spermatic cord with incisions into the tunica albuginea might be successful in curing the neuralgia. Hammond suggests pressure upon the cord for the relief of the obstinate cases, upon the theory that in this way the sensibility and conductivity of the affected nerve fibres will be obtunded.

A very interesting case showing the great annoyance which may reflexly arise from slight irritation of the genito-urinary tract came under my observation a few days ago. A gentleman 28 years of age had been troubled by frequent micturition especially a night for some years. At times he would be compelled to rise four or five times at night to evacuate his bladder. The only point in his history of any

importance was a gonorrhœa some seven or eight years ago. He confessed to masturbation and sexual excess in times past, but stated that sexual apathy and incapacity had prevailed of recent years. On examination I found a meatus which had been badly cut by some surgeon one year ago. Just within it was a very irritable and resilient stricture of a calibre of twenty Fr. Not a stricture perhaps, in the eyes of some surgeon, but a decided stricture in my opinion. This contraction was so irritable that attempts at exploration threw the entire canal into a state of spasmodic contraction. I found it impossible to pass a bougie through the deep portion of the canal. Cocaine was applied and a meatotomy at once performed. As soon as the meatus was free, I passed a 32 Fr. solid steel sound into the bladder without the slightest effort. The night of the operation the patient had the first uninterrupted sleep that he had enjoyed for years, this experience being repeated every night following until he left for his home in the west.

We have here a case of vesical and prostatic hyperæsthesia, and chronic spasmodic stricture—urethriismus—instantly relieved by removing the reflex sources of irritation, a resilient irritable meatal contraction.

Another interesting case of a somewhat different type is at present under my care. This case shows how posterior irritation may reflexly excite disagreeable symptoms in the anterior portion of the genito-urinary tract. A young man of twenty-five who had suffered from several severe attacks of gonorrhœa, presented himself to me complaining of severe burning and hot, lancinating pains along the pendulous urethra, localized at times at a point one inch posterior to the meatus. These painful symptoms were chiefly manifested after urination although present in the intervals. The patient was extremely neurotic and suffered from sexual hypochondriasis. Otherwise he was in a normal condition. The urine presented no pathological features, save *tripper fäden* and mucons casts of the prostatic follicles of the characteristic horse-shoe nail variety.

Examination with the bulbs showed a urethral calibre of thirty-four French, and an absolute freedom from contractions. There were several points of tenderness in

the penile urethra, and excessive tenderness in the prostatic region. Rectal examination showed the prostate to be slightly enlarged.

I made the diagnosis of urethral neuralgia and hyperæsthesia dependent upon posterior urethritis and follicular prostatitis.

There was no cutting to be done, and the treatment therefore consisted of intermittent dilatation with large sounds, and the application of nitrate of silver solution to the prostate. These applications were alternated with the application of the continuous current, positive pole, to the deep urethra. Internally tonics were given, the Tr. ferri chlor. being mainly relied upon. The case has slowly but markedly improved, a fact which is particularly gratifying in view of the stubbornness of such cases.

I wish to state in passing that I envy those surgeons who have such brilliant success in the management of this type of genito-urinary neurosis as is claimed by some. Personally I had rather see the gentleman with the cloven hoof walk into my office, than one of these patients.

The explanation of the obstinacy of such conditions is to be found chiefly in faulty sexual hygiene, a matter over which we have but little control.

As illustrative of the interesting character of some of the cases described, I take the liberty of presenting the following, selected from my case book:

CASE I. Reflex vesical irritability and intercostal neuralgia from contracted meatus. W. R. age 39. This gentleman had had numerous attacks of gonorrhœa in his youth, the last attack having occurred about fifteen years ago. Since this last attack he had been troubled with frequent micturition, necessitating his rising six to eight times during the night, and causing great irritability of mind. Micturition was occasionally quite difficult, requiring fifteen or twenty minutes for its completion, the stream being especially slow in starting. Every spring and fall and whenever he was overworked he suffered from a severe attack of pleurodynia, which had been variously diagnosed as pleurisy, impending pneumonia, cardiac neuralgia, intercostal neuralgia, etc. In two of these attacks in which I attended him, there was an elevation of temperature of about four degrees, with considerable

prostration, leading me to believe that the attacks were of a rheumatic character. On examination of the urethra, I found the meatus so small as to barely admit a small probe, and excessively tender and inflamed. A slight gleet discharge was noticeable, which the patient stated had been a constant symptom for years. I at once enlarged the meatus to 34 French, and attempted a thorough exploration of the canal. I found that steel sounds would not pass the muscular urethra on account of the intense spasm which they induced, soft bougies, however, passed readily up to 18 French. Above that size could not be passed without producing intense pain. No organic contraction of the canal could be demonstrated by either the urethrometer or *bougies a boule*. The second night after the meatotomy, the patient slept soundly for the first time in some years, and he has continued to secure his natural rest ever since, it being now three months since the operation. The flow of urine has become quite free, and starts as soon as an attempt at micturition is made, the act of micturition being of normal frequency. A marked improvement in the general health is noticeable and the nervous irritability has in a great measure disappeared. There has been some increase of weight, but as the patient is naturally spare, this has not been very marked. The attacks of pleurodynia have not recurred, although the usual time for their occurrence has passed; and as time goes on, I am confident that the theory of their dependence upon the urethral irritation will be confirmed. The gleet has disappeared entirely, and there has been a decided increase of sexual vigor; in short, as the patient expresses it, he is "himself again."

CASE II. General sympathetic disturbance and neuralgia of the testes, from stricture of large calibre and follicular prostatitis.

J. G. R. aged 45. This gentleman had several attacks of gonorrhoea, the last one having occurred some twenty years ago. For the last four years he had been suffering with irritation of the urethra, which had been referred to stricture, and treated by dilatation. Later on he had been "quacked" for diabetes, prostatic enlargement, Bright's disease, rheumatism, and several other afflictions, with no effect save to convert the patient into a confirmed hypochondriac. At the time he consulted me, he had been suffering from paroxysmal

pain in the testes, with occasional "burning" sensations in the testes, perineum, and cranial vertex, and pains of a rheumatic character in the limbs. On examination of the urethra I found that it would admit an 18 English sound quite readily save some pain was experienced at a point one inch from the meatus. At this spot the *bougie a boule*, demonstrated the existence of a linear stricture of large calibre. The prostate was found to be somewhat tender, but not enlarged. On examining the urine I found that it contained membranous shreds, which from their appearance I judged to be from the prostatic urethra, and the result of follicular prostatitis. A slight gleet discharge was noticed, evidently of a similar origin.

The meatus and stricture were cut to a 40 French, with a complete relief to the neuralgia of the testes. The rheumatism in the limbs has greatly improved, but the feeling of heat in the testes, perineum, and head has in a measure persisted, although much better. These latter symptoms I attribute to prostatic irritation, more particularly because applications to the prostatic sinus, of a sedative or astringent character, produce a marked and speedy amelioration of them. I have found also that the shreddy appearance of the urine was increased by each application to the prostate. Hot boracic acid irrigation has been substituted for these applications, and the case is slowly improving. The connection between the neuralgia of the testes and the stricture in this case is demonstrated by the improvement resulting from urethrotomy.

CASE III. Pseudo-impotence from contracted and irritable meatus. This case and Case IV I will not give in detail, but will present the salient points:

A young man of 27 had suffered from several attacks of gonorrhoea, the last of which ran into a gleet which lasted about a year. There had been no trouble with urination, but about six months before I saw the patient, he noticed a loss of sexual power. He would suddenly succeed in securing an erection at times, but erection would suddenly cease in the act of copulation. On examination I found the penis and testes apparently normal, but the meatus was quite narrow and excessively sensitive. There was no deep or penile stricture.

The meatus was incised to 34 French,

and sounds passed to the bladder every third day for several weeks. At the end of a month improvement was reported, and in about two months the patient reported himself as entirely recovered from his sexual disability.

CASE IV. Vesical atony from contracted and irritable meatus.—This patient, 40 years of age and a gambler by profession, gave the usual history of numerous gonorrhoeas and also of syphilis. Micturition had for a long time been attended by pain and smarting at the meatus, and a slight gleet had been present for some years. For about a year the stream had grown less and less forcible, until quite a strenuous effort was necessary to empty the bladder. On examination the meatus was found to be only moderately contracted, but very tender, the lips being everted and reddened. No deep strictures were discoverable. The feeble flow of urine through the catheter demonstrated the vesical atony. As the obstruction was only moderate and was congenital, the atony was explicable only upon the theory of reflex spasm of the cut off muscle and inhibition of the detrusor urinae. Meatotomy to 40 French resulted in an almost complete cure as demonstrated by examination six months after operation.

Other cases of a neurotic character have occurred in my genito-urinary practice, but these cases will serve for the purpose of illustration. In all my cases, due attention has been paid to general hygienic and medicinal measures, but the details of treatment would simply result in prolixity, without adding to the value of the report.

I have found that reflex neuralgia of the testis, penis and cord, and chronic spasmodic stricture are by no means rare, as several instances among my patients serve to demonstrate.

FATAL POISONING BY CHLORATE OF POTASH.

Dr. M. J. Donahoe reports in the *University Medical Magazine* for January a case of a man thirty-six years old who took by mistake two tablespoonfuls of chlorate of potash in water. Four of five hours afterwards violent vomiting set in, accompanied by great pain and tenderness in the epigastrium followed by albuminuria, and cardiac weakness, gradually increasing for a week, when the patient died.

CLINICAL CONTRIBUTION TO THE STUDY OF HYPERTROPHIC HEPATIC CIRRHOSIS.*

By DR. FREGHAN,
BERLIN, GERMANY.

Laënnec regarded hypertrophic cirrhosis as the early stage of ordinary atrophic cirrhosis of the liver. Todd, in 1857, was the first to try to show that an essential difference existed between the two forms. In 1859, Charcot and Luys contributed a short report to the *Société de Biologie*, supporting the same view on purely pathological grounds. Dr. Freghan very frankly admits that race prejudice prevented the Germans from giving a proper consideration to these investigations. Other investigators, however, followed up the studies of Todd, Charcot and Luys and with substantial agreement.

Dr. Freghan reports four cases of hypertrophic cirrhosis, all of which showed very similar symptoms and presented nearly identical post-mortem appearances.

CASE I. was that of a saloon-keeper aged 51, with good family and previous personal history. His habits had been correct with the exception of moderate indulgence in alcoholics. The disease had developed gradually in the last three months, the patient complaining principally of increasing weakness, loss of appetite and indigestion. Vomiting and profuse diarrhoea were recent symptoms, the bowels having previously been regular. For six weeks there had been jaundice with light colored stools, enlargement of the abdomen and swelling of the legs, particularly toward evening.

Condition on entrance:—The patient is a large pretty perfectly built man, moderately well nourished; icterus marked and general, including the conjunctivæ and upper air-passages. Considerable œdema of the lower extremities, tongue slightly coated; appetite not bad; temperature 97.6° pulse 108, respiration 24; urine scanty, dark-brown, with a yellow foam on shaking; much bilirubin present and a trace of albumin. The urine after standing deposited a sediment of isolated epithelial cells, pus cells and hyaline casts

*Condensed translation by A. L. Benedict, A. M., M. D., from the *Archiv f. Path. Anat. u. Phys. u. Klin. Med.*, April, 1892.

tinted yellow. Bowels sluggish, faeces hard and grey and of the consistence of clay. Lungs normal except for moist râles posteriorly; heart normal. "The abdomen is half-cannon, belly forward arched." No trace of collateral venous anastomosis; no tenderness on pressure; vague fluctuation inferiorly. Percussion verifies the expectation of ascites which is moderate and freely movable; liver greatly enlarged and plainly palpable; left lobe is the most hypertrophied and can be traced far into the left hypochondrium, no irregularities can be felt. The margin is rounded and the consistence of the whole organ strikingly hard. Liver reaches from the fifth rib to a hand's breadth below the arch of the ribs. The spleen is not palpable but on percussion is found to be enlarged, reaching from the eighth to the twelfth rib.

Course of the disease. The temperature remained about normal, the pulse continued rapid. The general symptoms became worse and worse and the patient's strength fell gradually but without remission. The icterus remained stationary. After eight days in the hospital the constipation was succeeded by watery but normally colored stools. The ascites increased very slowly but the patient complained so incessantly of the weight and distension that on September 11, eight weeks after admission to the hospital, the abdomen was tapped and 3000 c. c. of deep yellow fluid removed. Microscopical examination of the fluid revealed nothing. The tapping afforded only temporary relief. Four days later, the patient's intellect became disturbed and his speech was irrational and the articulation indistinct. For several days preceding, he had suffered from headache. A condition of sopor slowly deepened into coma with involuntary evacuations of urine and faeces and heavy labored breathing, and on September 21, death resulted.

Autopsy.—*Diagnosis:* Hypertrophic hepatic cirrhosis, enlarged spleen, ascites, laryngitis, pharyngitis, catarrhal bronchitis, oedema of the lungs, hypertrophy of the heart, arterio-sclerosis, parenchymatous nephritis.

Skin brownish yellow, face pale, considerable oedema of the lower extremities. Mucous membrane of the air passages and pharynx icteric and covered with a mucopurulent secretion. Small quantities of

clear yellow fluid in both pleural cavities. Left lung slightly adherent to the chest wall at the apex. On pressure, foamy fluid exudes from the bronchial tubes. Very little serum in the pericardium. Heart broadened. Tar-like fluid blood in the left ventricle and also strongly icteric chicken-fat clots. Valvular apparatus intact. Atheromatous changes above the aortic valves. Heart muscles yellowish brown, friable. The abdominal cavity contained about 4000 c. c. of turbid, somewhat fibrinous, dark yellow fluid. Intestines inflated and floating on the surface of the fluid. Serous coat of intestines slightly roughened and thickened in places. The stomach contained dirty brown fluid, its mucous membrane was markedly reddened in places and particularly near the pylorus. Gall duct patulous and discharging normal bile on pressure. Intestinal contents yellow in the jejunum, more brownish in the ileum. Mucous membrane of small intestines slightly reddened and loosened, the injection increasing toward the large intestine. Spleen enlarged by half, capsule greatly thickened. Section shows a bluish red color interspersed with dark blue pigment. Kidneys large and thick. Capsule strips quite easily. Surface smooth but with a few slight depressions. Marked congestion seen on section. Papillae pale and abnormal. Cortex thickened, glomeruli moderately injected. Liver very large, left lobe particularly involved. Surface uneven and marked by numerous granules of various sizes. Granules nowhere sharply limited but marked mostly only by slight and gradual depressions so that there was no great change of level at any place. Surface appears like shagreen with a ground color of pale yellow on which brownish zones were conspicuous. Weight of liver 3100 grams (more than twice the normal weight). Texture, firm and tough. On section, the arrangement of acini can still be detected, the acini appearing as dark brownish red in the midst of broad streaks of yellowish grey connective tissue. Venous channels patulous. Gall bladder contains about 30 c. c. of quite normal bile and a smooth gall stone of the size of a hazel-nut. Common and hepatic ducts and intra-hepatic biliary passages much dilated and everywhere patulous. Their mucous membrane is intact throughout.

CASE II. was that of a butcher aged 29

with good family and fair previous personal history except that he had quinsy in his youth and that he was addicted to the use of alcoholics. He presented about the same symptoms as the first patient, and, in addition, he had twice vomited blood to the amount of a pint on the same day. The hæmatemesis had not been repeated. As in the first case, there was a good physical development, normal temperature, rapid pulse, cedema, the last more general than in the first patient, jaundice. The stools were copious, loose, of normal color. There was bronchial catarrh and a mitral direct murmur. The liver and spleen were enlarged as in the first case. Eleven days after entrance, an exploratory laparotomy was made which verified the first diagnosis and revealed no opportunity for improving the patient's condition. There was some suspicion of echinococcus cyst, since the patient had had much to do with dogs. The course of the disease was steadily downward. The diarrhoea and the jaundice, including the coloration of the urine, continued. Once there was hæmatemesis. The temperature never exceeded 100.40°, while the pulse remained constantly above 100. The last stage of the disease occupied four or five days, beginning with great restlessness and loud complaints of pain. The patient tossed about and writhed in the bed-clothes but there was no delirium. This condition very quickly gave place to coma from which the patient could scarcely be aroused by shouting and shaking. The pupillary reaction remained.

Tubercular broncho-pneumonia was found post-mortem. The heart was relaxed but the valves were competent in spite of the mitral direct murmur. Three thousand c. c. dark yellow fibrinous fluid was found in the abdominal cavity. The intestines presented the same thickening and roughening of the serous membrane. The gastric mucous membrane was reddened and swollen, especially in the cardiac portion. That of the intestine was in places injected and covered with a bloody fluid. The kidneys were congested and the cortex somewhat icteric in streaks. Otherwise the kidneys were normal. The spleen was large and congested, its capsule thickened, the Malpighian bodies indistinguishable. The liver weighed 3,900 grams. Its serous covering was roughened and flecked with gray. The surface

of the liver was uneven from projections of the parenchyma. The consistence of the liver was about as in the first case—tough. The gall bladder and biliary passages were normal.

CASE III. was that of a saloon keeper aged 36 addicted to the use of alcohol to the amount of twelve or fifteen glasses of beer daily besides other spirits. Since spring he had suffered from pains in the upper part of the abdomen but which never became intense. Except for the longer duration of the trouble, about eight months, and an early remission, the history was not very different from the previous two. Ascites could not be demonstrated. The lungs were emphysematous and there was much bronchial catarrh. The spleen was so much enlarged as to be palpable. There was little change till two days before death when delirium suddenly set in. After about twenty-four hours coma ensued and death took place soon after with pulmonary cedema. The post-mortem diagnosis was hypertrophic hepatic cirrhosis, hyperplasia of the spleen, broncho-pneumonia of the lower lobe of the left lung, pulmonary cedema, old tuberculosis of the upper lobe of the right lung, purulent bronchitis, gastritis, enteritis. The liver weighed 4500 grams.

Case IV. was that of a man aged 34 who was also addicted to drink. The urine contained albumin and hyaline casts stained yellow. The temperature and even the pulse were normal. The patient was apathetic and made little complaint. Four days after admission he became still more stupid and, soon after, comatose. Death came suddenly. The post-mortem diagnosis was made of hypertrophic hepatic cirrhosis, enlarged spleen, ascites, pulmonary atelectasis, catarrhal bronchitis, pulmonary cedema, gastritis, enteritis. As in the third case, there was only 400 c. c. of fluid in the abdomen. The liver weighed 3500 grams. The biliary passages, as in all the other cases, were patulous.

A microscopic examination was made of the livers from the third and fourth cases, with almost identical results. There was a general and marked formation of new connective tissue. The whole parenchyma was interlaced with anastomosing lines of connective tissue of varying thickness. The new formation of connective tissue did not occur in the acini, but was most

marked in the lobules and was arranged in bands radiating between the liver-cells. The islands of hepatic tissue thus formed were irregular in size and shape and the rows of liver-cells were so compressed and distorted that the original structure was with difficulty recognizable. At times the process of formation of new connective tissue was marked by collections of white blood corpuscles and the connective tissue was composed of fine fibrils interrupted by only a few small nuclei. The liver-cells did not seem to have been destroyed although they appeared, almost without exception, flattened and atrophied in varying degrees. There was no indication of fatty degeneration or a retrogressive metamorphosis. The nuclei remained distinct and took the stain well. In the bands of interstitial tissue were numerous nearly-formed biliary-channels. They possessed a distinct wall lined with cubical epithelium. Their course was at times serpentine, at times nearly straight.

Dr. Freghan proceeds to discuss the various views taken of hypertrophic cirrhosis. Charcot compares it to an experimental hepatitis produced by ligation of the common bile conduit, the former resulting from trouble with the smaller biliary passages, the latter from obstruction to the main duct. Both of these diseases he contrasts as biliary forms with ordinary atrophic cirrhosis which is a venous form of disease. Attempting to follow out this theory, Charcot describes the newly-formed connective tissue of atrophic cirrhosis as being located primarily about the twigs of the portal vein and spreading thence to other parts of the lobule. In hypertrophic cirrhosis, however, he declares that the interstitial formation follows the course of the biliary passages and is located at the periphery of the acini. In this way Charcot explains the frequency of icterus as a symptom of hypertrophic cirrhosis whereas the typical symptoms of atrophic cirrhosis are those of portal obstruction. Ackermann and several others have, however, disproved Charcot's plausible theory of the connective tissue. Ackermann suggests that the essential difference between the newly-formed connective tissue in the two kinds of cirrhosis is its retractile tendency in atrophic cirrhosis and the lack of such a tendency in hypertrophic cirrhosis. He considers as analogous the difference between ordinary cicatricial connective tissue

and that formed in elephantiasis and in chronic obstructive hyperæmia. According to Ackermann, hypertrophic cirrhosis is primarily an affection of connective tissue while atrophic cirrhosis consists essentially in a degeneration of parenchymatous cells. Ackermann and Rosenstein compare the hepatic cirrhosis to kidney lesions. Rosenstein compares hypertrophic cirrhosis to the large kidney and particularly to its second stage, and atrophic hepatic cirrhosis to the common contracted kidney.

[Note.—If by "large kidney" is meant the large white kidney and if the "second stage" refers to the fatty and contracted kidney, the analogy does not seem well taken since both of these are lesions of parenchymatous degeneration, while the common contracted kidney marks an interstitial change.—A. L. B.]

To quote Dr. Freghan literally, "The Ackermannian theory, yes, in many points doubtless overshoots the mark."

Dr. Freghan takes a conservative position with regard to the difference between atrophic and hypertrophic cirrhosis, believing that the former may have an initial stage of increase in the size of the liver and the latter a final stage of shrinking. He lays down, however, a typical triad of symptoms for hypertrophic cirrhosis, namely, (1) enormous, usually gradual increase in the size of the liver, (2) intense icterus usually accompanied by colored stools; (3) ascites lacking or slight. Symptoms of secondary importance are the almost constant enlargement of the spleen and the tendency to gastroenteritis of hæmorrhagic type. The disease usually occurs between the second and the beginning of the third decenniums. [Dr. Freghan's four cases were aged respectively 29, 34, 36 and 67]. "The temperature changes are mostly within the normal limits, and evening exacerbations occur seldom." The pulse was about 120 in three of the four cases. This symptom has not been found mentioned in other articles on hypertrophic cirrhosis. The last stage of the disease is attended by an increase of temperature usually with delirium, sopor and coma successively. Cholæmia terminates the chain of symptoms. The duration of the disease is usually stated at three or four years but in this series of four cases it varied from four weeks to one year.

Mangelsdorf could find in the whole literature of atrophic cirrhosis only eight cases reported in which there was icterus; so that this symptom alone has considerable diagnostic value. The differential diagnosis must be made between hypertrophic cirrhosis and tumors. Intra-hepatic tumors are usually carcinoma and multilocular hydatid cysts. The former has icterus and the enlargement and hardness of the liver in common with hypertrophic cirrhosis, but the surface of the liver is usually uneven although the inequalities may not be palpable. The moderate ascites and the earlier age of hypertrophic cirrhosis are diagnostic points. The hard rounded prominences of echinococcus cysts, becoming soft later, the tenderness of the liver and its irregular contour distinguish it from hypertrophic cirrhosis. The disease must also be differentiated from a second category of tumors which grow from the larger biliary tubes. If the closure is not complete so that bile passes into the intestines, the diagnosis is difficult. If complete, hypertrophic cirrhosis may be excluded with considerable certainty.

The question naturally arises, why is there jaundice in hypertrophic cirrhosis if the ducts are patulous? Charcot's theory that this trouble consisted essentially of a disease of the biliary radicles has been disproved. Rosenstein has suggested that there is an over-secretion of bile and a lessened excretion through the smaller tubes but this theory does not solve the problem. Dr. Freghan believes that Charcot's theory is in part correct, that some of the biliary passages are involved so that bile is reabsorbed into the blood while other biliary passages are normal and excrete bile into the intestines.

With regard to etiology, Dr. Freghan adheres to the old view that alcohol is an important factor. He also inclines toward the belief that there may be a tubercular element. At any rate, hypertrophic cirrhosis and pulmonary diseases, especially tubercular, are frequently united in the same patient.

NEURALGIA OF THE TRIGEMINUS.

Dr. Leslie (*Lo's Experimentals*, No. 21, 1891) recommends snuffing a pinch of common salt into the nostril of the side affected, or throwing in a solution by means of a spray.

THE DIAGNOSIS OF SOME ABDOMINAL TUMORS SUPPOSED TO BE OVARIAN.*

By JAMES A. GOGGANS, M. D.,

ALEXANDER CITY, ALA.

Our text-books often lead one to believe that it is quite an easy matter to differentiate between ascites and abdominal tumors, and I have recently noticed that a few writers have, in referring to their series of abdominal sections for various causes, stated that, "no mistake in diagnosis was made in the whole series."

Now, my experience does not lead me to believe that the diagnosis of abdominal tumors is always such an easy thing; and I will make a few remarks on cases which have occurred in my experience which will serve to illustrate the fact that the diagnosis is often difficult, and in some cases indeed, quite impossible without resorting to an exploratory incision.

The specimen which I hold in my hand, is a part of the remains of a cystic ovary and tube removed from a patient, 35 years of age. She was taken with pains in the pelvis after having had her fourth child. This pain continued for four years before the abdomen began to enlarge, and at the time I saw her and removed the tumor the abdomen was extremely large. She had been tapped three times and large quantities of fluid had been withdrawn. The cannula had been left in the abdominal cavity for three days, and a solution of iodine had been injected into a cyst which was supposed to exist. I recognized some obscure form of pelvic disease and opened the abdomen for its removal. Two water buckets-full of ascitic fluid escaped from the abdominal cavity, when a cystic ovary as large as an orange was found floating in the pelvis. The cyst was ruptured in the attempt to bring it through the abdominal incision, the pedicle being extremely short. There has been no return of the dropsy, and the patient has made an uninterrupted recovery.

The following case is one of extreme interest, being the only case which has ever recovered in America after operation, and perhaps the only one where operation was

*Read (by title) before the Georgia State Medical Association April 22, 1892.

undertaken for exactly the same condition in this country.

Patient, 21 years of age, had been in bad health for two years, but her abdominal pains had existed only about eight or ten months. The abdominal enlargement was first noticed only three months before I first saw her. Her father and brother, both physicians, had made the diagnosis of abdominal dropsy, and upon my first examination I thought that I had to deal with an ovarian cyst. Upon further investigation I recognized some obscure form of abdominal cyst which could be elucidated only by an exploratory incision. This was made and the cyst proved to be one of the mesentery. The removal of the sac was impossible, consequently it was incised and emptied of a large amount of thin fluid, the incised lips drawn into the abdominal incision, and a glass drainage tube introduced to the bottom of the cyst and drainage kept up until recovery was complete.

The second specimen I show you is a multilocular cyst of the ovary. It was removed from a patient, 45 years of age. The abdomen was quite full of ascitic fluid, and fluctuation in the cyst was very indistinct. In fact the fluid in the cyst was only semi-fluid. The diagnosis in this case was almost impossible. From the fixity of the tumor it seemed to be a most unfavorable case on which to operate; but there was much distress, and as the uterine cavity was not elongated, and there were no other signs indicative of malignant disease, I consented to operate, with the results as I show you. The patient made a perfect recovery.

A few weeks ago I was asked to see a lady who had been told that she was pregnant, and the symptoms pointed very clearly toward pregnancy, the menses having ceased to flow quite suddenly. It turned out to be a dermoid cyst which in all probability may have been solid originally, and very closely connected with the uterus. I must think that all abdominal surgeons who have much experience encounter more or less difficulty in the diagnosis of many cases. And I believe that we should exhaust every means at our disposal to make a perfect diagnosis, but after doing all this, there are still cases where there is manifest serious abdominal disease, and our course is quite clear that we should not wait for a post-mortem examination to clear the

way, but should boldly make an exploratory incision and give the patient a chance for life. I can recall cases sufficient to establish in my mind the fact, that many lives may thus be saved, which would, without exploratory incisions, have been sacrificed. I make it a rule to regard all female patients, who are invalids and suffer from incapacitating pains, with surgical suspicion, whether they have a tumor or not. If I can not make the diagnosis perfectly clear, it in no way interferes with me, for I believe the way to duty is quite clear, and that the condition is an unnatural one and demands an operation. I am not an advocate for abdominal section for mere symptoms, especially dysmenorrhea and the neuroses, but am firmly of the opinion that we should always be able to put our hands on something that we know is pathological, and is causing serious symptoms, before we subject the patient to such a grave procedure. The point I wish to bring out in this paper is, that it is altogether unnecessary to wait and try to map out all of the pathological conditions that may be present in a given case before an operation is undertaken.

RESECTION OF THE INFERIOR MAXILLARY NERVE.

Dr. v. Vamossy reports a case treated by Zuckerkandl's method and describes the operation as follows: "The incision is made on a line drawn from the tragus to the middle of the naso-labial fold, so that one-third of its length is over the masseter and two-thirds in the cheek. Cautiously dissecting down to the fascia of the masseter, Steno's duct and the facial nerve are to be drawn aside. After the moderate hemorrhage has ceased, the fascia is opened and the fat removed with forceps and scissors. There is now a cavity, whose bottom is the buccinator, and which is bounded behind by the internal pterygoid and without by the masseter muscle, the ascending ramus of the jaw and the tendon of the temporal muscle. At the posterior part of the latter the nerve is found. It is easiest found by tracing back the branch which is found at the bottom of the wound upon the buccinator muscle. From 2 to 2½ cm. of the nerve should be excised. V. reports a successful case. The only drawback of the operation is its bad cosmetic result."—*Wien. Med. Presse*, No. 48, 1891.

THE ETIOLOGY AND BACTERIOLOGY OF DIPHTHERIA.*

By FRANKLYN J. TOWER, M. D.

MILWAUKEE, WIS.

Although this is a subject which is causing a great deal of discussion in the medical world and so much is at present written on it, I have no apology to offer for reading this paper before the Milwaukee Medical Society. The particular point I wish to elucidate and emphasize most strenuously is the examination of all membranes or other exudates in cases of suspected diphtheria and to show the ease with which it can be done by any physician possessing a microscope of four or five hundred diameters-magnification and a few modest accessories which should be in the appanage of all practitioners of medicine.

There is probably among the diseases which we are called upon to treat, none more difficult to diagnose than diphtheria; and when we fail to recognize it, in no instance are the consequences likely to be more disastrous to others exposed. On the other hand, when every case of throat difficulty is called diphtheria and treated accordingly, there is an unnecessary isolation, an unnecessary expense both to the government and patient and with but one possible advantage; praise for the doctor upon the rescue of his patient from the grave. On this so-called advantage I think you will agree with me when I inform you that in 380 cases which have come under my indirect notice I find that 50 per cent. recover within 48 hours; and if this is diphtheria it is a disease of most benign type and instead of dreading to care for cases we should delight in a disease with such a termination.

Several have put forth the assumption that filth was the direct cause of diphtheria but all such theories have long since been exploded.

In 1868, Oertel discovered in the diphtheritic exudate a micrococcus; Cohn also found them and called them micrococcus-diphtheriticus; but Billroth, Klebs and others showed them to be the pyogenic bacteria which without doubt we find in a large per cent. of all throat affections and

which if in sufficiently large numbers will produce grave and general toxæmia, but such conditions are not contagious and in no case does paralysis follow, and we have usually a rapid convalescence. The pseudo-diphtheria described in which a claim is made that a non-toxic bacillus identical with the Klebs-Loeffler bacillus (to be later described) is found, is probably a pyogenic micrococcic disease with occasional bacilli, for I have failed to corroborate the assertion and believe that there is but one diphtheritic germ and as Roux and Yersin hold that the other bacillus found by some investigators is but an attenuated form of the Klebs-Loeffler bacillus, there being but one thing which may argue against this, i. e., the Klebs-Loeffler bacillus changes the alkaline reaction of the culture media to acid while the spurious bacillus does not.

In 1883 Kelbs isolated a peculiar bacillus always present in diphtheria, conducted many experiments upon it which were verified by Loeffler in 1884 and later by Brieger and Frankel, Roux and Yersin, Simonds, Klein, Welsh and Abbot and many others.

Oster states in his late and very excellent work on practice that the poison of diphtheria is not given off by the breath; but owing to many instances of infection through the air only, with which I am cognizant, I cannot agree with him for I have also been enabled to infect tubes of media with the breath from a diphtheritic blown through a glass tube bent many times, so that fluid particles could not reach the culture media.

To Wagner, Weigert and Oertel are we indebted for the descriptions of the minute changes which take place in diphtheria, the always perfect technology of Weigert showing itself in every case.

Klein, of London, in 22 cases of diphtheria found the Klebs-Loeffler bacillus in all and in those examined in which they were not found the cases were not contagious and recovered rapidly.

V. Bates found with no exception the bacilli in all cases examined.

In the series of 342 cases compiled by Johnston, of Montreal, examined by sixteen different men, 307 cases were found in which the bacilli were present, 35 cases absent, 24 of these were of Dr. Prudden's cases; and it is well here to notice that these were all cases of sore throat of chil-

*Read before the Milwaukee Medical Society, May 24, 1892.

dren, all inmates of an institution, in which there was an epidemic scarlatina and erysipelas, so that these should go for naught. The other eleven cases were instances of one or two failures in a large series, as in 52 cases examined by Beck, in two of which he failed to discover the bacillus.

Ruffer in the *British Medical Journal* in a preliminary paper on this subject gives many interesting notes on examination, and also some good staining processes. Simonds in an elaborate article remarks that every false membrane which does not contain the Klebs-Loeffler bacillus is not a diphtheritic product, and writes very exhaustively on the morphology of the organism. In the experiments on animals, of Roux and Yersin, the important fact is disclosed that the bacillus can be found as early as six to fourteen hours after the inoculation, and it is well known that in a 24 hours culture, the bacilli will have developed so that they can be seen in colonies and on steamed potato show the characteristic thin, colorless, glassy scale. It might be well at this point to call your attention to the description of the bacilli under consideration; they are about the length of the tubercle bacillus and twice as thick, that is, about 3μ in length by 6μ in thickness; they exhibit a variety of bizarre and various forms; are often thickened upon one or both ends; in which latter case the central tenuity may be nearly invisible, giving the appearance of a diplo-coccus, and may be sometimes bent like a comma bacillus. They are stained in two minutes in solutions of the methyl blues, or in 15 minutes by Gram's method; they grow well on gelatine bouillon, blood serum, steamed potato, or in sterilized milk, are killed by an exposure to 58° temperature for ten minutes, do not grow, except sluggishly, at a temperature below 18° ; they form no discoverable spores, but are extremely tenacious of life, as they may be dried for years and then recover and show their vitality upon implantation in a proper soil; they form an exceedingly active toxalbumin.

In 1890 in one of the numbers of the *Berliner Klinische Wochenschrift*, Brieger and Fränkel give an exhaustive article on ptomaines or bacterial poisons, as they designate them, and give many experiments of the filtered cultures of the Loeffler bacillus. According to their researches,

the ptomine is rendered innocuous by exposure to a temperature of 100° for twenty minutes, or two hours at 58° ; when injected into animals, caused multiple cell necrosis and paralysis, but no membrane; the actual presence of the bacilli themselves being necessary for the formation of the exudate; the paralysis even occurring after many weeks.

In 1887 Loeffler made the first experiments on this ptomaine by making ether extractions of bouillon cultures and evaporating to dryness, dissolving the residuum in water and making from the resultant solution the inoculations.

According to Roux and Yersin the ptomaine introduced into the stomach causes little trouble; alcohol precipitates it from solution; carbolic acid has also the same property and a small amount added to cultures diminishes their toxicity.

The bacilli are found only in the most external portions of the membrane so that on section and proper staining the bacilli can be seen confined only in that part of the membrane.

This exudate consists of an aggregation of dead cells most of which have become hyalin material; and the nuclei when seen have suffered a fragmentary destruction. The first change which takes place when the bacilli have fallen on a proper soil is a cell necrosis caused by the ptomaine, particularly of the epithelium and leucocytes which become paralyzed and are unable to perform their function of phagocytosis. The irritation causes an exudation of fibrin elements agglutinating the whole together and the pseudo-membrane has now a layer; and it is thus that there are many layers formed which can be seen by placing a diphtheritic exudate in water when the layers will separate. Following the cell death a hyalin transformation or coagulation necrosis occurs.

At a late meeting of the Berlin Medical Society a lengthy discussion was called out by a paper read by Baginsky on the etiological relationship of the Klebs-Loeffler bacillus to diphtheria in which the important and general decision was reached that an absolute diagnosis of diphtheria could not be made without a bacteriological examination. In 154 cases of so-called diphtheria, Baginsky found the Klebs-Loeffler bacillus in 118, the mortality of which was 40 per cent; only 25 per cent. ran a mild or favorable course; of the 36 cases in

which only cocci were found; only four proved fatal or 11 per cent.; and one of these was complicated with measles and died from pneumonia; two developed bilateral empyema and the other was admitted with a severe paralysis, in which latter case the bacilli had probably given way to the coccic invasion and it was a true case of diphtheria; which would give but a mortality of 8 per cent. in the coccial variety, if I may be allowed the term; and they all developed sufficient complication to prove fatal.

I have six cases which I desire to refer to, all of which have come under my notice in practice. Case one: female, age 18—all the symptoms of diphtheria; exudate covered both tonsils extending back over the entire pharynx, no bacilli found; and on this result called it a tonsillitis—other children were exposed who had not had diphtheria—case recovered in three days and the other children remained well.

Case two: Female, age 7, small patches on right tonsil and uvula, very light case, bacilli present, child isolated but brother came down in a few days.

Case three: Male, age 11, brother to case No. 2, membrane very extensive, great prostration, bacilli found, faucial paralysis developed and remained for a long time.

Case four: Female, age 10, contagion from sister who died three days previous to my being called, membrane extensive, nasal and laryngeal variety and extended as far down as I could see, bacilli very numerous.

Case five: Male, age 6, disease infecting the nose principally, uvula slightly affected, many bacilli present, exposed to child of neighbor who died.

Case six: Female, age nine, membrane extensive, bacilli present both in exudates and in a piece of expectorated membrane, nasal voice and difficulty in swallowing remained for some time.

I have examined all cases of throat disease that have come under my notice and when the bacilli were found I had many reasons also for believing my case to be diphtheria, and when not present I have never seen contagion follow, any paralysis, or even slow convalescence. My method is as follows in these cases—I carry a few cover glasses on my second visit, take two or more, clean them, rub a little of the tonsilar, faucial or, nasal exudate on them

or put a particle of the membrane between two and press it out flat—slide the glasses apart and dry for 2 or 3 minutes in the atmosphere, put covered glasses together and return wrapped in paper to my pocket until my return home—when in a few minute I find, or not, the bacilli; often times there are micrococci of many kinds and spirilla; even the leptothrix found in the mouth is often seen, but no trouble will be had in seeing and determining the proper bacilli. When the disease has progressed and the Kelbs-Loeffler bacilli are present in considerable numbers they are nearly if not quiet alone. In all cases of suspicious throat difficulties it is well to examine with a view to the determination of the presence of the bacilli. In Case I. which I recited, as in many others which I have seen, I was inclined to call it diphtheria on my first visit, but did not solely because I failed to find the bacilli, and though others were exposed to the case no contagion followed.

I must of necessity arrive at the conclusion that a microscopical examination of membrane or exudates is of much value in the diagnosis of this disease.

A few words on some of the late experiments with the chemistry of the toxalbumins of diphtheria or albumoses as they are now called, will no doubt hold attention. Injections in animals of minute doses produce a Wallerian degeneration of certain nerves, seeming to be greater in motor nerves and to affect particularly the terminals; alternate fibrils are attacked, accounting for the recovery from diphtheritic paralysis, we have therefore in this substance not only a fever producer but a true nerve poison.

By making extracts of the tissues of a corpse dead of diphtheria, doing so within a few hours after death to preclude the entrance of saprophytic bacteria, not only can a toxalbumin be removed, but also an organic acid which has far less virulency when inoculated into animals. These albumoses are precipitated though not coagulated by alcohol, are soluble in water and not precipitated therefrom by ebullition.

According to Roux and Yersin, .0004 gm. is capable of killing 8 guinea pigs of 400 gms. weight each, or two rabbits of 3 kilo-grams each.

Martin concludes that the effect of this poison in the body is a digestive process;

the proteids of the body upon digestion forming these albumoses and organic acid. In anthrax we have an alkaloidal poison; in diphtheria it is probably a ferment. (For discussion, see Society Reports.)

110 Mason St.

SOME POINTS CONCERNING THE OPENING OF THE MASTOID PROCESS.

Heiman (*Arch. of Otol.*, xx, 2) sums up the indications for the operation as follows:

1. In acute purulent otitis media, complicated with inflammation of the mastoid process, when the inflammatory symptoms do not yield to antiphlogistic treatment and Wild's incision.
2. In acute and chronic purulent otitis media, when the escape of the secretion is impeded by granulations in the middle ear or stenosis of the external auditory canal, or when there is a suspicion of inflammation of the mastoid process.
3. When the mastoid process is apparently healthy, but the removal of pus or cholesteatomatous masses through natural channels is impossible, and symptoms dangerous to life manifest themselves.
4. In congestive abscesses and fistulas in the region of the mastoid process.
5. In persistent, continuous pain in the mastoid process, yielding to no other treatment, especially when it seems sensitive to pressure.
6. As a prophylactic operation, in symptoms of retention of secretion and inflammation of the mastoid process when death is to be feared on account of imperfect disinfection.
7. In acute purulent otitis media, in which there is no inflammation of the mastoid process, and no retention of secretion, but in which the discharge is very profuse, does not yield to the usual methods of treatment after a certain time, or even increases.
8. When there are distinct symptoms of inflammation of the brain and the meninges.

Heiman has used the trephine & *crémaillière* of Pasteur for opening the mastoid, and has received the following impressions from its use: 1. The removal of the compact portion of the mastoid process is much more rapid than with the mallet and chisel. 2. The edges of the wound need not be rendered smooth after the operation. 3. The different size of the trephines permits the formation of a wound in the bone of the desired size. 4. Shock is entirely obviated. 5. The depth of the wound can be graduated with exactness.

Society Reports.

MILWAUKEE MEDICAL SOCIETY.

Stated Meeting, May 24th, 1892.

Dr. F. J. Tower read a paper on the *Ætiology and Bacteriology of Diphtheria*. (See page 181.)

DISCUSSION.

DR. MILES H. CLARK: I have very little to say in opening this discussion, except words of commendation for the paper of Dr. Tower. I do not think that there can be any doubt in the minds of any of us as to the advisability of microscopical examination in order to determine a doubtful case. As far as I myself am concerned, I have been singularly fortunate, in having but one case of diphtheria since I have been in the city, but I have had any number of cases of tonsillitis and cases doubtful enough in my own mind so that I have been rather suspicious and at certain times anxious, for fear that contagion to other members of the family might follow; and it seems to me that with this method before us, properly carried out, that many times, not only the lives and safety of other members of the family can be cared for, but also the extreme annoyance to the members of the family itself from having a case placarded which is not diphtheria avoided; and I have no doubt that very many cases have been thus reported which were not diphtheria. I have seen many cases of tonsillitis with the tonsils completely covered with membrane from the coalescence of distinct follicles or follicular patches, which have recovered in the usual short time of a tonsillitis; but if such case as that had furnished contagion for a family of four or five children, and had resulted in diphtheria to the rest of them after I had called it tonsillitis, I might have felt very much ashamed of myself. For this reason I would simply commend the examination of the exudates in this manner.

DR. F. E. WALBRIDGE: I would like to have the doctor give us his methods of staining the bacillus.

DR. A. B. FARNHAM: The infecting poison is a ptomaine. The bacillus forms a slight layer and the ptomaine causes the fever, as I understand it. A practical

question came up to me once this summer. If you will notice at the commencement of the disease, you will see a first glassy layer and if you treat that layer with a solution of chromic acid of sufficient strength and penetration to destroy it, could not the case be cured? The only case of diphtheria that I have treated in a family here in Milwaukee was one in which I saw that very first infection, a small, glassy layer. I happened to be treating a throat disease and it developed this, and on just that merest commencement I made a diagnosis which proved to be correct, and I have thought since that if that had been destroyed then and there, the whole difference might have been ended. Once this summer I saw that same appearance and I did treat it with chromic acid and it was the end of it.

DR. S. W. FRENCH: We might as well tell of our failures as our successes. It will be remembered that a few weeks ago I reported some possible cases of abortion of diphtheria by the use of submucous injections of chlorine water. It was not very many days after that when I was called to a case that had undoubted symptoms of diphtheria, and I gave it a most thorough injection, and I used chlorine water that there was no doubt about whatsoever. There was some doubt, I will say, in regard to the other chlorine water that I used after I had seen this. I gave that case an injection on two successive days and gave it very thoroughly, but the case went from bad to worse and is now under the sod. Dr. Tower made the statement that the bacilli were found on the surface. Seibert, however, in his paper in the matter of the use of chlorine water, says that the bacilli are found in the sub-mucous layer and that is the reason he gives them the submucous injection of chlorine water, to kill the bacilli in their nest holes, so to speak.

But there is one other point. Dr. Tower has said in his paper that it is, as I understand it, beyond a doubt established, that this so-called Klebs-Löffler bacillus is the bacillus of diphtheria. I should like to know if that is a positive fact; if it has been proved over and over again a sufficient number of times to establish beyond a doubt that it is the bacillus of diphtheria.

DR. W. H. WASHBURN: From my reading, it has not seemed to me as though the question of the etiology or the mat-

eries morbi of diphtheria was yet absolutely determined, although especially during the last two or three years the evidence seems to be growing stronger and stronger that the Klebs-Löffler bacillus is the materies morbi of the disease, yet if you will look over the files of the medical journals, you will find that a great many cases are reported that have presented all of the appearances of diphtheria, both as to the course and termination and following paralyzes, and many cases also with the element of contagiousness present, where this peculiar bacillus has not been found.

Dr. Tower referred to the cases of Baginski. The impression that I derived from reading the report that I saw of that paper was somewhat different from the way he stated it in his paper. There were quite a number of cases that presented every appearance of diphtheria except that they did not contain these bacilli; and a certain number of those were fatal and were followed by paralysis of the pharynx, and I believe that those cases were cited to illustrate the fact that it was not so certain after all that the Klebs-Löffler bacillus was the actual active agent in the disease; nevertheless the mortality among those cases was much less than among those in which this bacillus was present.

I think that we would gain considerably if we were all of us expert enough with the microscope to be able to recognize these bacilli; but I do not think that if I had Dr. Tower's paper as a guide and my microscope beside me that I would be able to make a satisfactory examination of the sputum. It does not seem to me as though he has gone sufficiently into the subject of the preparation and characteristics of the bacilli to enable one who is not already expert in the study of bacteriology, to the discovery of this bacillus.

DR. A. J. PULS: I just want to make this point, that Dr. Tower stated that contagious diseases of the throat he classes always as diphtheritic. It seems to me that I have seen a number of cases of ordinary tonsillitis which was just as contagious as diphtheria, although the disease appeared in a benign form; so also coriza.

DR. U. O. B. WINGATE: It is well known that we have a great deal of diphtheria in this city. During the past year 1891, there were four hundred deaths recorded, and usually where a death certifi-

case comes in, it is pretty sure that the diagnosis has been correctly made as diphtheria. Undoubtedly there are a great many cases of diphtheria reported that are not diphtheria, but I think that the physicians of the city as a rule are inclined to give the public the benefit of the doubt and report the cases. It is a commendable practice, I believe, and unless there is some way of making a positive diagnosis, as Dr. Tower has stated in his paper, it seems to be the best course to pursue. Certainly it is much better to report a case that is not diphtheria than it is to fail to report a case that is genuine diphtheria, if we are to attempt to do anything in the way of prevention. There are certain wards of the city, I have noticed in looking up the records of the past year, that show a very marked dissimilarity in the proportion of the number of cases reported and the deaths. Some wards show a very large mortality compared with the number of cases reported and others a very small mortality.

There are two questions I would like to ask Dr. Tower, one is, is it not well recognized that you may find bacillus of diphtheria in a throat that does not have diphtheria and which may recover without having diphtheria, or even in perfectly healthy throats? The other question is in regard to the degree of temperature which will destroy the bacillus, which I do not quite understand?

DR. F. J. TOWER: In answer to Dr. Walbridge about the staining of these bacilli, there is probably nothing easier to do in a microscopical way. All the necessary chemicals that are needed are a small amount of a Methyl blue, probably Griebner's blue is about the best that can be had; it can be made in an aqueous solution, or it can be made in what they call Loeffler's blue which is an extremely weak solution of caustic potash with the aniline dye dissolved in it, making a saturated solution in alcohol; and when you want to use the staining material add five or six drops of the saturated alcoholic solution of the aniline to a watch-glass full of water; pass your slide through an alcohol-flame or gas-jet two or three times to set the albuminous substances, then place it in your watch-glass of blue water and hold it over the burner or gas-jet and heat it until it steams; do that for two or three minutes or until you bring it to the boiling point,

then let it stand for four or five minutes; take the cover-glass out of the blue solution, wash it in water, put it proper side up on a slide and examine it immediately, pressing out the superfluous water. Probably there is no easier thing to do than to make that examination. If you are in doubt as to the presence of the bacillus, take a potato, which need not be sterilized, put some of the exudate on it and keep it at about the temperature of the body, about thirty-eight degrees; leave it there for five or six hours or until the next morning, then take a little of this glassy film which forms. The Klebs-Loeffler bacillus under proper temperature grows with extreme rapidity, whereas other bacteria that would interfere with our examination do not, so that it is really unnecessary to sterilize the media that we use for examining or hunting for the Klebs-Loeffler bacillus.

In answer to Dr. Farnham about the ptomaine, as I understand it, I think the definition for the word ptomaine means alkaloidal-poison. According to the late experiments made with this substance produced by the Klebs-Loeffler bacillus, it is not a true ptomaine, it is an albuminous substance. This glassy layer that the doctor spoke about is exactly what is seen on a potato or on gelatine. The finding according to Seibert of the bacilli in the submucous tissue I doubt. I have made lately some sections of diphtheritic membrane according to new processes and find that the bacilli are with possibly an exception or two, all contained in the outside, so that if we take a piece of membrane say one-eighth of an inch thick and properly stain it, when it is thoroughly washed out and held to the light, we will see a fine blue line in some cases where the bacilli are; oftentimes they do not seem to be able to puncture through the membrane. Otherwise, why do not the bacilli enter the body, and it is a known fact that they do not. As far as the Klebs-Loeffler bacillus being the cause of diphtheria is concerned, I did not know that there was any doubt about it, but there may be. As good men as I have quoted in my paper, men that are continually working on that subject, almost no other subject, claim that it is a fact. My own experience has been limited; I have had a very few cases to examine actually, but in those cases where I have, as I state, I found the Klebs-Loeffler bacillus.

and where it was a case that had progressed considerably there were no other bacteria found at all.

Dr. Washburn said that he had a different idea from a certain paper by Baginski. Baginski did in his article call out both sides of the question. My reference to that paper was only in this way, to the opinion of the other men present who were probably at this meeting in Berlin lately, some of the most eminent men there are in the world, and the general opinion arrived at seemed to be that a bacteriological examination was necessary, as I stated.

In regard to not being sufficiently plain in my methods, I think I have covered that point now. About the contagiousness of choryza and tonsillitis, that certainly is possible; but the contagion that we have there as due to the streptococcus and the cephalococcus pyogenus due to pus microbes. I think Dr. Weurdeemann will tell you, as I believe, that some cases of otitis media are contagious, and probably for the same reason. Dr. Wuerdeemann, could not such a case of otitis media produce an ophthalmia?

Dr. H. V. WUERDEMAN: Yes, sir. Otitis media, however, is contagious indirectly, i. e., the nasal affection disease is contagious; and coryza is contagious, producing a purulent ear disease, then eustachian salpingitis, and after that, middle ear disease.

Dr. Tower: In answer to Dr. Wingate about finding the Klebs-Löeffler bacillus in non-diphtheritic cases, I doubt if it is so found. It has been to my mind proven, where there is a considerable number of Klebs-Löeffler bacilli present, the substance which they produce being a ferment, a minute quantity of it in the circulation seems to act as ferment, and that minute quantity it is necessary to have but a very small number of Klebs-Löeffler bacillus present to produce, so that if we had a case with any discoverable number of Klebs-Löeffler bacilli in the throat, we would probably have some systemic effects also. I believe that some investigators, I could not name them now, have claimed that they found occasionally the Klebs-Löeffler bacilli in sputum, in faecal mucus, but there is, of course, in those cases where you find one or two, the possibility of not only their inability to discover them, but also it is very easy to make a mistake in the bacteriological examination,

if everything is not absolutely and scrupulously clean, in which case you are bound to have some kind of outside infection.

In regard to the temperature necessary to destroy the Klebs-Löeffler bacilli, probably it was a little bit misleading, as I used the centigrade scale. Exposure at a hundred degrees or boiling point is sufficient to destroy them. The Klebs-Löeffler bacilli themselves grow but very sluggishly at a temperature below 18 degrees centigrade and do not grow above 58 degrees centigrade which would be about 140 degrees Fahrenheit.

Dr. A. B. FARNHAM: I believe that the authorities state that an exposure to a temperature of 140 degrees for ten minutes will destroy the Klebs-Löeffler bacillus; of course a higher temperature is usually employed, 200° or 250°.

Dr. W. H. WASHBURN: The doctor spoke of the bacillus being present on the surface of this false membrane, and in his remarks he said—at least I so understood him—that if the bacillus was on the under surface of this false membrane, why didn't it get into the blood. We know that these bacilli do not get into the blood. Is it not a fact that these bacilli have been injected subcutaneously under the skin of the animals and yet have not got into the blood? If I am not very much mistaken, experiments of that kind have been repeated time and again. The bacilli have been injected subcutaneously and still have not found their way into the circulation, but remained right where they were injected; and hence the objection that the bacilli were not on the under surface of the membrane, because they did not get into the blood, would not be tenable.

SEPSIS OF THE UMBILICAL WOUND.

Eross (*Arch. f. Gyn., B. xii., H. 3*) observed the process of healing of the umbilical wounds in 1,000 new-born infants under different modes of treatment. A strictly normal course was the exception rather than the rule. Morbid conditions of greater or less gravity were found in sixty-eight per cent. These consisted in sloughing of the stump, softening instead of complete mummification, decomposition of fragments left undetached after the rest had separated, suppuration and gangrene. Pyrexia occurred in 220 cases and in a certain proportion of instances was the only evidence of septic absorption.

Selected formulae.

FOR HOARSENESS.

In addition to the measures employed in the treatment of the causative condition, the following formula will prove useful in the amelioration of hoarseness:

R	Acid. tannic.....	3j.
	Pulv. sodii biborat.....	3j.
	Tinct. capsici.....	℥ss.
	Aque rose.....	℥ix.—M.

S.—To be used frequently as a gargle.

—Whittle.

FOR LARYNGEAL PHTHISIS.

In the treatment of this affection, Cozzolino (*Revista de Ciencias Médicas de Barcelona*, April 25, 1892) employs this mixture:

R	Pulverized iodoform.....	5.00 grammes.
	Powd. phosphate of calcium.....	10.00 grammes.
	Boric acid, in powder.....	5.00 grammes.
	Menthol.....	From 40 to 50 centigrammes.

M. Sig.—To be insufflated into the larynx, night and morning.

FOR SYPHILIS.

The following mixture is recommended by Stukovenkoff and Balzer (*Jour. des Maladies Cutan. et Syphilit.*, April, 1892), in the treatment of syphilis:

R	Benzate of mercury.....	0.40 grammes.
	Iodide of potassium.....	20.00 grammes.
	Distilled water.....	25.00 grammes.
	Simple syrup.....	1000.00 grammes.

M. Sig.—A dessertspoonful a day.

THE USES OF RESORCIN.

The therapeutic uses of resorcin are carefully reviewed in *Il Raccoltore Medico*, April 30, 1892, and the following prescriptions recommended:

For acute gastritis, dyspepsia, etc.

R	Pure hydrochloric acid.....	2.00 grammes.
	Sublimated resorcin, of each.....	20.00 grammes.
	Syrup of orange peel.....	175.00 grammes.

M. and place in a dark bottle. Sig.—A tablespoonful every two hours.

For catarrh of the stomach:

R	Infusion of rhubarb root.....	100.00 grammes.
	Sublimated resorcin.....	3.00 grammes.
	Bicarbonate of sodium.....	5.00 grammes.
	Peppermint water.....	10.00 grammes.

M. and place in a dark bottle. Sig.—A tablespoonful every hour.

For carcinoma of the stomach:

R	Decoction of osage.....	100.00 grammes.
	Tincture of rhubarb.....	5.00 grammes.
	Sublimated resorcin.....	5.00 grammes.
	Syrup of orange peel.....	20.00 grammes.

M. and place in a dark bottle. Sig.—A tablespoonful every hour.

For sea-sickness:

R	Sublimated resorcin.....	0.1 to 0.75 grammes.
	Sugar of milk.....	2.5 grammes.

M. and make thirty papers. Sig.—A powder every hour.

EARACHE.

When due to inflammation of the external meatus, it is well to scarify first, and then to make use of aural suppositories or tampons, about one-third inch long, and composed of:

R	Morphin. sulph.....	aa cgm. 10.
	Cocain. hydrochlor.....	aa cgm. 10.
	Gelatin.....	grm. 60.—M.

Or, the canal may be irrigated by 6-per cent. solutions of cocaine, or 20-per cent. solution of carbolic acid in glycerin.

—*Giornale Internaz. delle Scienze Med.*

CAVAZZANI'S ANTISEPTIC POWDER.

To improve upon the antiseptic virtue of iodoform and at the same time to diminish tendency to cause bleeding, Cavazzani (*Wein Med. Presse*) has devised the following:

R	Iodoform.....	P. 55.
	Salicylic acid.....	P. 30.
	Bismuth subnitrate.....	P. 30.
	Camphor.....	5.

This mixture has proven an excellent disinfectant and stimulant in cases of bubo. Its use must be suspended every fifth or sixth day, iodol being employed instead.

SUPPOSITORIES OF MORPHINE AND CAINE IN PERITONITIS.

Dr. Klefer (*Le Bulletin médical* No. 44, 1892), in order to combat the pain and vomiting of peritonitis, employs the following suppository:

R	Extract of opium.....	aa cgm. 1.
	Hydrochlor. cocain.....	aa cgm. 1.
	Iodoform.....	q. s.
	Cacao butter.....	q. s.

NUTMEGS IN HÆMORRHOIDS.

The common nutmeg employed in the form of an ointment is said to give prompt and permanent relief in itching and painful piles. It may be employed as follows:

R	Pulv. nuc. moschat.....	3j.
	Acid. tannic.....	3j.
	Petrolat.....	3j.

M. Sig.—Apply locally.

—Ex.

CORYZA.

R	Naphthalin in an impalpable powder.....	3vj.
	Powdered boric acid.....	3vj.
	Powdered camphor.....	gr. xv.
	Extract of violets.....	gr. xv.
	Essence of roses.....	gtt. xx.

Sig.—Mix and use as a snuff in coryza.

—*L'Union Médicale Therap. Gazette*, May 16, 1892.

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Leading Articles.

CARBOLIC ACID GANGRENE.

The profession has recently been warned more than once through the unfortunate experience of surgeons that the use of carbolic acid solutions as a surgical dressing is frequently followed by grave complications, amounting in some cases to a condition of dry gangrene of the parts that have come in contact with the acid. This complication may result when the original injury is only trivial. The first symptom the patient will complain of is a numbness of the parts, or a prickling sensation, this is frequently followed by severe pain, and upon removal of the dressing the parts below it will be found to have assumed a dark blue or black color, to be without feeling, and in other words, to present the typical picture of dry gangrene.

Billroth, the German surgeon, has some time since called the attention of the profession to the danger attending the use of carbolic acid, and his warnings were quoted by nearly all the leading German medical journals. Strange to say, apart from the histories of a few cases published by Kortum, no further mention has been made of the subject in German literature. Kortum sought to explain this unfavorable action of carbolic acid, by crediting it to an action upon the vaso-motor nerves.

It has however, been the privilege of Dr. A. Frankenburger, of Nuremberg, in his able Inaugural Address before the University of that city, to definitely settle the question of the cause, and to throw much valuable light upon the subject. His address has also been discussed editorially in a recent number of the *Medicinische Neuigkeiten*.

In France the subject has been widely discussed, and among French writers on the subject the dissertations of Tilleaux and Secheyron are perhaps most notable. It is evident that the conditions produced

are not merely the result of the cauterizing effect of the acid, as suggested by Billroth.

Frankenburger, to settle the question, conducted a series of experiments upon animals, the results of which appear to be most conclusive. He applied the acid in the form of a 3 per cent. or 5 per cent. solution upon a bandage covering the intact skin of the animal. The parts over which the bandage was placed were shaved, and the dressing kept constantly moist with the solution. Every half hour microscopical examinations of a portion of the skin were made, and the experiments lasted for about three hours in each instance.

In every case a typical "mummification" of the skin was observed, which gradually encroached upon the deeper tissues the longer the application was continued. The microscopical appearances of the preparations were very characteristic and similar in every case.

The epidermis was destroyed, and the papillae of the chorion were laid bare; there were large gaps in the connective tissue due to an enlargement of the lymphatics; the lumina of the vessels were filled with a partly yellowish red and partly yellowish white masses,—viz., vascular thrombi.

That these thrombi are really formed *intra vitam* during the course of the experiments, is proven by the results of many authors who have studied the action of carbolic acid upon the blood, among whom we may mention, G. G. Bill, Huchs, Prudden and Hueter. These writers have observed as an action of the acid a change of the blood corpuscles, consisting in a degeneration of the red corpuscles and accession of the amoeboid movements of the leucocytes. This has been shown by direct examination of the mesentery of a curarized frog, as a direct action of the acid. Frankenburger's experiments show that a similar action is obtained by the mere application of dressings moistened

with a weak carbolic acid solution. He summarizes the results of his experiments as follows:

If parts of the human body, intact or else having slight injuries, be brought in contact with a carbolic acid solution of $2\frac{1}{2}$ or 2 per cent. strength, the action of the acid will in predisposed cases, cause a gangrene of these parts extending as far as the application.

This gangrene assumes the typical appearance of dry gangrene. It is caused by the formation of thrombi in the vessels, and if the application be kept up for a sufficient length of time will result in an entire occlusion of all the vessels in the field of contact, thus robbing the parts of all nutrition.

This thrombosis and subsequent occlusion is directly caused by the degenerative action of carbolic acid upon both the red and white blood corpuscles. There are no circulatory disturbances of note caused by the action of the acid upon the vasomotor nerves.

The longer the acid is allowed to remain in contact with the parts, the deeper the gangrene will spread.

This action is especially frequent in such parts as are entirely surrounded by the dressing—notably the phalanges of the extremities.

The use of carbolic acid in the form of moist dressings is especially prone to cause gangrene.

The danger of carbolic acid gangrene is especially predominant in weak subjects, women and children.

In conclusion, we would infer from the results of these observations and experiments that the use of carbolic acid as a dressing in minor or major surgical operations should be restricted as much as possible, and other equally efficacious antiseptics substituted; and, finally, that the profession should warn the laity against the indiscriminate use of the drug in the treatment of injuries.

Book Reviews.

TREATISE ON MEDICAL AND SURGICAL GYNÆCOLOGY. By S. Pozzi, M. D., Professeur Agrégé à la Faculté de Médecine Chirurgien de l'Hôpital Lourcine-Pascal, Paris. Complete in Two Volumes. Translated from French Edition under the supervision of, and with additions by, BROOKS H. WELLS, M. D., Lecturer on Gynecology at the New York Polyclinic; Fellow of the New York Obstetrical Society, and the New York Academy of Medicine. Volume Two. With 174 wood-engravings, and 9 Full-page Plates in Color. Royal Octavo. 174 wood-cuts. Muslin, \$6.00; sheep, \$7.00; half morocco, \$8.00.

The first volume of Pozzi's Gynecology was favorably noticed in these columns some months ago. Volume second fulfils all the expectations raised by its predecessor. Undoubtedly the work will take rank as the leading exposition of modern gynecology. It is not to be expected that every theory and every statement of the author will find acceptance; but his book is so comprehensive, progressive, and so distinctively fresh and modern that it must gain universal favor. It is refreshing to find many untenable theories of the older authors (especially as to the pathology and therapeutics of pelvic inflammation and extra-uterine pregnancy) ignored, and instead to find modern theories based upon the facts proved by the experience of the past twenty years. Gynecology has developed so marvelously during this time, and the mass of facts accumulated has been so great, that it is now possible to write a scientific treatise upon this subject. It is no longer possible to sustain theories either as to pathology or treatment upon reputation of their discoverers and promulgators. Hence we can chronicle the passing away of the but recently accepted theories concerning pelvic inflammation, cellulitis, pelvic abscess, hæmatocoele, displacements of the womb, the perineal body, etc.

Chapters I-IV deal with the many and complex problems of pelvic inflammation in a manner which will find approval with all who have had opportunities for studying the subject not only clinically but also by abdominal section. Special statements will, of course, be challenged, but on the whole we know of no exposition of this subject equally good. The author regards sepsis in childbed and gonorrhœa as the great causes of pelvic inflammation. He considers also that almost without exception

the extension of the inflammation takes place along the mucous lining of the uterus and tubes, and yet he distinctly upholds the doctrine that at times—especially if not exclusively during the puerperal state—extension takes place along the lymphatics. The doctrine is laid down in positive terms that salpingitis is precedent to and a part of almost every case of peritonitis; and this is emphasized by treating the subject under the title perimetro-salpingitis. The innovation is to be commended as fixing upon the mind of the student the fact that almost without exception salpingitis precedes, causes, and is a part of pelvic peritonitis. The strictly minor rôle of inflammation of the pelvic cellular tissue also is amply elaborated. It occurs at times as a result of puerperal infection. This is the usual form. It occurs also as a result of inflammation of the uterine appendages. Pozzi also admits (but gives no proof) that it occurs as a result of dirty operations upon the uterus. In view of all the facts proof should have been forthcoming for this statement to gain credence. Well-observed cases, with autopsies, as for instance those reported by Coe, of the Woman's Hospital in New York, of deaths from septic inflammation following operations on the uterus, show that in such cases the inflammation spreads to the peritoneum through the Fallopian tubes. The portion of these very excellent chapters most open to criticism is that relating to the treatment of pus in the pelvis. The author admits the propriety of simple incision of the pus collections under several conditions—at the same time admitting the danger and deficiencies of the method. Many excellent gynecologists absolutely reject such measures, and treat all such cases by coliotomy; others probably with greater wisdom reserve incision for cases of broad ligament abscess, or suppurating hæmatoma—both rare conditions—and certain cases of pelvic abscess when the patient is exhausted and suffering from general sepsis. In the last class of cases by evacuating the pus the patient can at times be improved so as to withstand the shock of a radical operation to remove the abscess sac.

Chapters V-IX treat of tumors of the uterine appendages, broad and round ligaments. The treatment of these subjects is satisfactory, but conventional. Chapter X is devoted to genital tuberculosis, and

Chapter XI to hæmatocoele. Unfortunately this was written before the general acceptance of the fact that most cases of hæmatocoele are cases of ruptured tubal pregnancy. The author advises the policy of doing nothing, which is clearly inadmissible because of the dangers of recurrent and fatal hæmorrhage. While it is true that cases of hæmatocoele recover under the expectant treatment, it is none the less true that very many die from further hæmorrhage. Fortunately abdominal section in good hands will save almost every case.

Chapter XII covers the subject of ectopic gestation admirably. The author everywhere takes advanced ground. The work of the past is chronicled and due praise given to the many who have added to our knowledge of this subject. But great advances are predicted for the future. The currently accepted pathology in given, primary abdominal and ovarian pregnancy being admitted. But these are regarded as most rare, and due caution is exercised in accepting doubtful examples. Werth's view that an ectopic gestation should be regarded as a malignant tumor, to be removed promptly after its discovery, is commended. Prompt removal of the gestation sac is advised in all cases before the fifth month; injections of morphia, and electricity are condemned, as being uncertain if not unsafe. The dangers inherent in the condition are considered greater than those of the operation. It is gratifying to find such sound doctrines taking vigorous root in French soil. Prompt operative interference is advised also for the later months. The dangers of hæmorrhage and septicæmia being regarded as greater than those of an operation. It is pointed out that recent operations have been much more successful than older ones. Thus up to 1886 Harris reports thirty sections done during the viability of the child with five mothers and sixteen children saved; whereas since that date of thirteen cases, nine women and eleven children were saved. Much is expected from prompt operation with a perfected technique. The author states, "here, as in all the problems of abdominal therapeutics, the theoretical objections of a timid surgeon fall before the results of a bolder practice characterized by good technique." The results under expectant treatment until after false labor having

been so deplorable, the courageous surgeon will be emboldened to apply his art for the relief of these women in such peril of their lives. With modern hæmostatic forceps and an abundance of gauze for packing, the skillful surgeon should be able in most cases to successfully remove the gestation sac and add another triumph to abdominal surgery. Cases in which the placenta grows from the intestines will probably remain a dangerous class to deal with.

Chapters XIII—XXIII deal with diseases of the vagina, vulva and perineum. Chapters XXIV—XXVI treat of malformations of the genital organs and Chapters XXVII—XXVIII of diseases of the urinary tract, rectum, and pelvis, thus giving the book a wider scope than is usual with treatises upon gynecology.

Periscope.

THERAPEUTICS.

TINCTURE OF IODINE IN INFECTIOUS ULCERS OF THE CORNEA.

Chibret (*Rec. d'ophthal.*, September, 1891) thinks he has found in tinctures of iodine the following necessary properties: 1. A powerful and general antiseptic action. 2. Energetic dialytic power. 3. Absence of formation of insoluble salts causing indelible opacities of the cornea. 4. Non-destructive effect on the cornea. He thinks his belief in the value of this drug has been fully justified by the results, and he even recommends its use in corneal scars and opacities.

TREATMENT OF THREAD WORMS.

Heath (*British Medical Journal*, December 10, 1891, p. 1300) writes that within the last few years the views about ascarides have greatly altered. It used to be thought that they lodged entirely in the rectum, and that the patient could be cured by copious enemata, usually of salt and water. But it has been shown within the last few years that it is not a fact, and that these ascarides have their habitat mainly in the cæcum, and are to be found, more or less, throughout the whole length of the large intestine. It must, then, be borne in mind that it is not sufficient to attack the rectum with enemata, but purgative medi-

cine must also be given which shall act upon the cæcum and clear away the worms themselves and the mucous in which they are lodged. You may often see them coming away in large balls as the result of purgative medicine, and until they are thoroughly cleared out you cannot hope to cure the patient.

CANTHARIDINATES IN TUBERCULOSIS.

Demme (*Therap. Monatsh.*, March, 1892) has treated 30 cases by subcutaneous injection. The potassium salt was used at first, but the sodium preparation gave rise to less pain. There was never any suppuration at the site of the injection, but in one case a considerable swelling occurred without any reddening of the skin. It took long to subside. The dose used was 0.0001 to 0.0002 g. In 10 cases of more or less severe laryngeal with pulmonary tuberculosis no conclusion could be formed owing to the insufficient length of the treatment. After giving short details of the remaining 20 cases, the author makes the following remarks: Results are obtained by this treatment more surely than by any other method. The drug must be used with great caution, for albuminuria appeared in every case. This albuminuria lasted longer than the treatment in 5 cases. The effect on the lungs is slight, but expectoration becomes easier. In the larynx the cedema, especially that over the arytenoid cartilages, disappears almost completely. More solid infiltrations also tend to become smaller more quickly than under other treatment. While some cases were greatly improved and might (if the albuminuria could be avoided) be looked upon as cured so far as the larynx was concerned, two were certainly cured. In other cases temporary improvement alternated with relapse.—

Brit. Med Jour.

LOCAL APPLICATION OF CALOMEL IN INFLAMED HÆMORRHOIDS.

Dr. B. James (*La Semaine Médicale*, No. 11, 1892) has employed with success for several years the local application of calomel in inflamed hæmorrhoids. The remedy is applied topically by the fingers to the swollen and inflamed parts. This rapidly causes all the morbid symptoms to disappear. The writer has not seen a single case resist the action of this remedy.

MEDICINE.

EMIGRATION OF LEUCOCYTES FROM THE TONSILS.

Dr. Polyak finds that most of the leucocytes which in a normal condition of the tonsil migrate through its epithelium into the buccal cavity are lymphatic corpuscles (lymphocytes)—that is to say, young elements generated by karyokinesis of the cells of the adenoid tissue. There are, however, in addition, a considerable number of leucocytes with polymorphic nuclei which migrate from the superficial capillaries and capillary veins. The emigration of these multi-nuclear leucocytes is also observed in places where there is fibrous connective tissue beneath the epithelium. The emigration of large numbers of lymphocytes is accompanied by well-marked destruction of epithelium close to the free surface, but the emigration of the multi-nuclear leucocytes only appears to give rise to increased exfoliation of the superficial epithelial cells. When acute inflammation of the mucous membrane was induced by irritation with chemicals, the emigration through the many layers of flattened epithelium was mainly confined to multi-nuclear leucocytes.—*Lancet*.

ON THE KNEE-JERK IN THE CONDITION OF SUPERVENOSITY.

Dr. T. Hughlings-Jackson makes a short preliminary communication on this subject in the *British Medical Journal*, 1892, No. 1624. He has observed absence of knee-jerks in some cases of emphysema with bronchitis, where the blood has become venous in an extreme degree. As the patients observed were near death, he hesitates to conclude that they were absent as a mere consequence of supervenosity. He quotes the case of a girl of nine years suffering from diphtheria, who was tracheotomized at midnight for urgent respiratory difficulty, producing cyanosis. Before the operation her knee-jerks were absent. On the following day, the cyanosis having then disappeared, the jerks were obtained and remained present until her discharge from the hospital. The knee-jerks of a dog artificially asphyxiated by clamping the trachea were absent in the

third stage of asphyxia, having been exaggerated in the earlier stages of the condition. It is suggested that the preliminary exaggeration was owing to the loss of cerebral control over the lumbar centres, the eventual loss being occasioned by the succumbing of these strongly organized spinal centres to the poisonous influence of super-venous blood.

The testing of knee-jerks before and after the administration of oxygen to cyanosed patients may be expected to throw light on the question. If supervenosity is a cause of loss of knee-jerks, that fact may be important in the apoplectic state, and possibly somewhat with regard also to post-epileptic coma. Careful observations on such cases may be productive of valuable results.

ANKYLOSTOMIASIS THE BERIBERI OF ASSAM.

According to the *Indian Medical Gazette* for February, 1892, Dr. G. M. Giles finds that the disease known as the beriberi and the kala-azar of Assam are identical, and that they are in reality ankylostomiasis caused by the *Dochmius duodenalis*. This parasite, Dr. Giles finds, develops slowly if at all in drinking-water, but develops plentifully in fæces. The ingress of the parasite into the human system is believed to be due to the habit of cleansing kitchen and table utensils with infected earth, and of eating food from a mat on the ground. The symptoms and causation of the disease are the same as those found by Dr. Kynsey in the so-called beriberi of Ceylon.

THE CEREBRAL CIRCULATION DURING HYPNOSIS.

Drs. Sarlo and Bernardina (*Rev. Spirituale* XVIII, III), publish an article on this subject in which they discuss some of the physiological literature and elaborately report a case in which they were able to make a careful study of the cerebral pulse through an aperture in the skull due to an old traumatism, and their paper is illustrated by sphygmographic tracings. The authors conclude as follows: (1) The cerebral circulation is different according to the hypnotic conditions, it appears that there may be hyperæmia in the reduced

lethargic state and anæmia in the thus induced cataleptic condition. (2) Everything leads us to believe that antagonism between the cerebral and the peripheral circulation, during the hypnotic state does not exist. (3) A greater frequency and an apparent increase of the respiratory oscillations are observable in the hypnotic condition. (4) The psychic functions, during the hypnotic conditions, incite a vascular reaction, identical with that which occurs in the normal state, but less marked on account of the existing vascular constrictions. (5) The hypnotic state should not be considered as anything by itself, but serves only to put in evidence what already exists. The hypnotic manipulation, of whatever kind (sensory stimulation, suggestion, etc.) has only the effect to increase the excitability of such nerve centers that are, as it were, the *locus minoris resistentie*, and detach or functionally cut off certain nerve elements from the complex that forms the organic substratum of the healthy mind. In our case the cortical motor elements, morbidly excitable, were, through the hypnosis, separated from the rest.

SURGERY.

PARTIAL NEPHRECTOMY AND REUNION OF RENAL PARENCHYMA.

Tuffier (*Archiv. Génér. de Méd.*, July, 1891). Renal cysts are frequently mistaken for ovarian cystoma. Of these, the unilocular are benign in opposition to the multilocular ones. In the former the renal parenchyma is sufficiently extensive as to leave no doubt as to the desirability of preserving the organ as functionally useful. Complete nephrectomy, it has been heretofore held, offers a better chance of recovery in these cases of renal cysts than incision. The discouraging results in this operation, however, led the author to institute a series of experimental studies (*Gaz. Hebdom.*, 1888, 1890, *Archiv. Génér. de Méd.*, 1891), which developed the fact that hæmorrhage from the renal parenchyma may be controlled by compression of the vessels of the hilum and suture of the renal tissue. Such renal wounds heal readily and fistulae are only observed to occur in cases in which the ureter has been injured. He therefore proposes to carefully dissect only the renal cyst, and to

suture carefully the walls of the cavity in the substance of the kidney. This procedure was carried out successfully in a case communicated by T. After enucleation of the cyst the renal tissue was sutured by deep catgut sutures, the capsule being sutured separately, hæmorrhage ceasing as soon as this was accomplished; no drainage was employed. The wound healed kindly. In this case an epithelioma of the bladder was subsequently removed by suprapubic cystotomy. The subsequent fate of the patient is not recorded.

EUROPHEN IN SURGICAL DRESSINGS.

The respective advantages of dry and moist dressings have received much attention of late. A point was made concerning dry dressings which did much to decide operations in their favor. We refer to the quality possessed by some of them of adhering closely to exposed surfaces thus making an impervious, antiseptic covering, beneath which the reparative processes may uninterruptedly take place. This adhering property is observed in a marked degree in euprophen, which has attained a high reputation as a cicatrissant. Euprophen, too, is a bulky powder which may be spread to advantage over large denuded surfaces in cases in which it would be dangerous to employ iodoform. The antiseptic and stimulating properties to euprophen have, no doubt contributed greatly to its success, for its cresolic component promptly shows a characteristic action. The iodine contained in euprophen goes off slowly, thus preventing the toxic action so often recognized in preparations of iodoform, and making frequent dressing necessary, while its solubility in the liquified products of inflammation add to its effectiveness as well as its safety. In the lesions of syphilis, in ulcerated surfaces, burns and all traumatism, this new dressing has done admirable work. Euprophen has undoubted advantage over iodoform in being free from disagreeable odor or toxic influences.

IMPROVEMENTS IN THE ELECTRO-ENDOSCOPE.

Dr. Oberländer (*Archiv für Derm. und Syph.*, 1892, III. Heft.) gives an account of some improvements which have been devised as a result of suggestions furnished

by a more or less constant use of the endoscopes of Nitze and Leiter.

The most important improvement seems to be a substantial enlargement in the caliber of the tubes used. Formerly only instruments with a caliber of 22 to 24 F. was employed. It was found, however, that in a large proportion of the cases examined tubes of 28 to 30, and even 32 F., could be introduced. As these yielded a much larger field of vision and better illumination, their use was found to be of great clinical value.

The advantages to be derived from practicing internal urethrotomy, under guidance of the eye, by means of improved endoscopic instruments, are spoken of and the apparatus described and illustrated. (This procedure was, however, first described and practiced by Dr. F. Tilden Brown, of this city, who demonstrated its practicability and exhibited his instruments before the Genito-Urinary Section of the N. Y. Academy of Medicine, some six months before the publication of this paper.)

The writer is of the opinion much may be expected from the employment of electrolysis and the direct application of the galvanocautery, in stricture and hypertrophic disease of the urethra: and his appliances for carrying out these suggestions are also described among the more recent improvements. Considerable advantage has been gained in deep urethral endoscopy by the employment of the hinged-obturator which enables the observer to introduce the straight tube to the membranous urethra without pain or difficulty.

OBSTETRICS.

COMPLETE RUPTURE OF UTERUS.

Winter (*Centralbl. f. Gynäk.*, No. 1, 1892) exhibited a uterus before the Berlin Obstetrical Society not long ago. A rent passed obliquely through the anterior walls, and reached from the contracting ring nearly to the os externum. The serous coat was divided as far as the level of its firm attachment to the muscular tissues, so that there was communication with the peritoneal cavity through a rent nearly 4 inches long. At the necropsy, the uterus was found strongly anteverted,

and the intestines and parietes had already (within 28 hours) adhered around the rent so as to cut it off from the peritoneal cavity. The patient was a 3-para, aged 29; one labor was normal, one required forceps. The third was at term, and began naturally. In ten hours the water broke and the pains ceased. About nine hours later, rupture of the uterus occurred, the head slowly receded from the pelvis, and a trifling amount of flooding took place. The patient was sent into a lying-in hospital. Winter found that the child had entirely escaped into the abdominal cavity, and lay in the first position, close under the parietes. The temperature was normal, the pulse 124; there was evidence of peritonitis, but not of severe hæmorrhage. The indication was, he thought, to deliver at once, rather than to take steps to check hæmorrhage. He did not deem it advisable to attempt to deliver through the rent and out of the vagina, as the fœtus lay far from the uterus, and the rent, if enlarged, would be the source of fresh hæmorrhage. He made a short incision through the abdominal walls, and drew out the fœtus and placenta within ten minutes. There was but little collapse; the symptoms of peritonitis subsided for awhile after the operation, but soon reappeared, and the patient died in twenty-eight hours. Nevertheless, Winter holds that the simple operation which he performed was preferable, in cases where little hæmorrhage or fear of hæmorrhage existed, to the long, difficult, and complicated suturing of the uterus in abdominal section. The following table gives the results of thirty-seven cases of rupture of the uterus, with complete escape of the child into the peritoneal cavity:

Treatment.	Number.	Deaths.
Died undelivered.....	5	5
Delivered through the rupture.....	5	5
Abdominal section after delivery through the rupture.....	1	1
Abdominal section, and delivery through incision; no suturing of uterus.....	12	4
Abdominal section and delivery through incision; suture of uterus.....	7	5
Porro's operation.....	4	4
Total.....	37	24

Thus delivery through a simple incision in the abdominal walls gives a percentage of 86 for recoveries.—*British Medical Journal*.

GYNECOLOGY.

DIABETES AND THE FUNCTIONS OF THE FEMALE ORGANS.

Strojinowski (*Nouv. Arch. d'Obstet. et de Gynec.*, March, 1892, Supplement.) on the basis of eleven cases under his own observation, states that diabetes not only causes suppression of the catamenia, but also distinct atrophy of the uterus and ovaries.

CIMICIFUGA IN THE TREATMENT OF DYSMENORRHEA AND OVARIAN IRRITATION.

Following the example of Boddie, of Edinburgh, Dr. James Brunton has employed blacksnake-root in the treatment of dysmenorrhœa and ovarian irritation. He employed 30-minim doses of the tincture thrice a day, and was able to dissipate the occipital headache and ovarian pains from which his patient suffered. In cases of dysmenorrhœa, similar doses every four hours produced great benefit.

Brunton believes that the drug is an anodyne, which is valuable as a substitute for the bromide and opiates in dysmenorrhœic pain.

When given for dysmenorrhœa, it should be given four days before, and continued over the period.

In metrorrhagia, and menorrhagia, he believes it is a regulating agent, although it is sometimes disappointing in its action.—*Practitioner*, April, 1892.

HYSTEROPEXY.

Chaput (*Annales de Gynec. et d'Obstet.*, April, 1892) discusses the treatment of uterine retroflexions. In simple retroflexion where the uterus is freely movable, the pessary is sufficient, though the curette may be needed; but in more advanced reflexions where the pessary cannot be used, abdominal section is needed. This proceeding is preferable to vaginal hysteropexy, as it allows the operator to choose between simple replacement of the uterus, removal of the appendages with or without fixation of the uterus (abdominal hysteropexy), and fixation without castration. As fixation of the uterus itself is not in all respects advisable, Chaput recommends that the pedicles of the amputated appendages be fixed to the abdominal wound, or that the round ligaments be shortened, if the

removal of the appendages be inadvisable. In the discussion on this communication, P. Petit advocated Alexander's operation. He said that it had fallen into discredit owing to the many indications for thorough treatment of complications in each case. It sometimes proved necessary, he declared, to perform, at the same sitting, curettage, plastic amputation of the cervix, anterior colporrhaphy, colpoperineorrhaphy, and shortening of the round ligaments. Chaput objected that it was impossible to diagnose all the complications which interfered with the success and value of Alexander's operation without an abdominal exploration, which at once altered all the conditions associated with that operation. Petit did not think highly of hysterectomy. In one case, performed by a good operator, the pains from which the patient had suffered continued, and a bad ventral hernia developed. In another the patient was sick on recovering from chloroform, and the vomiting caused the threads to cut their way through the uterine tissue into which they had been passed. The patient died of hemorrhage.—*Brit. Med Jour.*

ENDOTHELIOMA OF THE OVARY.

Rothorn (*Archiv für Gynäkologie*, Band xli., Heft 3) describes and figures the appearances observed in microscopical sections of so-called endothelioma, which he regards as a true neoplasm, favoring the term "sarcoma perivasculaire" applied to it by Ackermann. He thinks that capillary stasis is doubtless an etiological factor in its development. Several forms of endothelioma may be distinguished according to their mode of origin and the prevailing histological structure.

PEDIATRICS.

ACUTE CHOREA, WITH FATAL ENDOCARDITIS.

Stahl, (*Annals of Gynec. and Pediatrics*, Phila., 1891, v., 183.) gives the following case:

G. M., female, aged six. Family history free from any neurotic tendency, or other discoverable predisposition to disease. For a week or ten days before seeking medical advice, she had complained of her legs and feet being asleep, the "numb feelings" seemed to be confined to the

lower extremities and not referred to the articulations.

On May 19, 1891, she was pale, had moderate fever (101°), pulse 130, small and somewhat irregular in rhythm, tongue coated, stomach irritable, frequent vomiting, bowels constipated, some cough. There were small moist râles over both lungs with no impairment of resonance. There was presystolic and systolic mitral murmur, without increase in cardiac area. There was considerable dyspnoea. Three days later there developed a mild chorea, most marked on the right side. It reached its greatest severity and rapidly subsided. The dyspnoea, meanwhile, increased and the pain about the heart became more severe. By the twelfth day the choreic movements were no longer present, the dyspnoea now amounted to orthopnoea, the murmur had not changed in character, there was puffiness about the extremities, and the lungs were more congested. The child died the twentieth day from my first visit of heart failure due to dilatation. No autopsy allowed.

INFANTILE MELANOSIS.

A rare case of melanosis of the lower jaw in an infant is recorded in the current number of the *Annals of Surgery* by Charles A. Power, of New York. The child was three months old when it came under observation. The swelling was about the middle of the left side of the gum of the lower jaw, and in size about that of a small almond, oval, of moderately firm consistency and covered by mucous membrane which was apparently normal. An exploratory incision was made which yielded no pus. At the end of a month; when the child was again brought to the hospital, the swelling had much increased in size. It projected well beyond the middle line of the mouth, pushing the tongue far to the opposite side. It was dense, and firmly attached to the body of the jaw, which, when felt externally, was much enlarged and resistant. Ultimately the left half of the jaw was removed under chloroform. The ordinary incision along the lower border of the bone was used, the body divided a little to the right of the symphysis, and the condyle dissected from the glenoid cavity. The operation occupied a little over an hour. The patient took the anæsthetic badly, failed to rally,

and died two hours after being returned to the ward. On microscopic examination the tumor proved to be a true melanotic growth, springing from the periosteum of the lower jaw. The author adds that the patient would have had a better chance of life had time been taken up in operating. But in so young a subject such a procedure as was carried out would in any case have proved one of a very formidable nature.

SULPHUR IN THE TREATMENT OF CHLOROSIS.

Prof. Hugo Schulz (*Med. Neuigkeiten*, No. 17, 1892) recommends sulphur in cases of pure chlorosis where iron has no action. In such cases the general condition is much improved by the administration of sulphur. After this drug has been given for a time the use of iron may be begun and successfully carried out. On the contrary, it is not well borne in catarrhal and inflammatory states of gastro-intestinal tract. The form of administration is:

R Flowers of sulphur..... 5 jss.
Milk sugar..... 5 xxv.
Sufficient for ten powders. A knife-pointful three times a day.

HYGIENE.

STOP SPITTING.

Says Dr. T. M. Prudden:—"If the vile and increasing practice of well-nigh indiscriminate spitting goes unchecked in nearly all assembling places and public conveyances; if the misguided women who trail their skirts through the unspeakable and infectious filth of the street are to be admitted uncleaned into houses and churches and theatres; if theatres and court-rooms and school-houses and cars are to remain the filthy lurking-places of contagia which their ill ventilation and their mostly ignorant and careless so-called cleaning necessarily entail; if in sleeping-cars and hotel bedrooms the well are to follow consumptives in their occupancy without warning, or even the poor show of official disinfection; if in ill-ventilated and ill-cared for dwellings the well must breathe again and again the dust borne seeds of tuberculosis; if no persistent warning is to be given to the ignorant of the dangers which lurk in uncleanness—then our task will be most complex as well as difficult in limiting the contagiousness of tuberculosis."

Of course cleanliness and plenty of water are necessary, but, after all, it is the expectoration which carries the germ and promotes the spread of disease. Spitting, it seems, is not only a vile, but an increasing habit. This is an unfortunate social fact which reformers do not seem to have grasped, despite its noxiousness. Shall we not have to have Society for the Prevention of Expectoration—except into sanitary spit-cups? If one could stop the spitting habit, prevent the spread of consumption, and finally stamp it out, he would be greater than a tariff reformer.—*Medical Record*.

EFFECTS OF ANTISEPTICS ON VIRILITY.

Attention is called by Dr. Van Den Corput (*Rev. Therap.*) to the diminution of virile power which he has observed in patients to whom he had prescribed antiseptics, such as salicylic acid, quinine, menthol, carbolic acid. The author supposes that these antiseptics act on the blood elements, and on the seminal cells as on inferior organisms. The spermatozooids become in effect completely immobile under the microscope, like all the leucocytes, which lose their amoeboid movements, and can no longer effect their migrations. Salicylic acid acts in the same manner upon the ovary, and causes the lengthening of the menstrual period.

AVINE TUBERCLE VERSUS HUMAN TUBERCLE.

Some further experiments are recorded by Mr. Charles Richet on the protection afforded against tuberculosis by inoculation with cultivations of the bird tubercle. This micro-organism, though closely allied to the normal microbe, differs from it in several important respects. Thirty dogs, all in robust health, were taken, nine of which were thus inoculated without giving rise to any local or constitutional manifestations. All the animals were then inoculated with a cubic centimetre of cultivation of the active human tubercle bacillus. Within a month from the date of inoculation every non-vaccinated animal had succumbed to the disease, while the nine dogs previously treated to a dose of the bird tubercle remained in good health. So far as they go those observations possess very great interest, but it is

hardly necessary to point out that it would be premature to conclude that we are yet in possession of the means of protecting human beings against this terrible malady. It is a far cry from the laboratory to the sick-bed, and it is notoriously unsafe to apply the results obtained in the treatment of maladies experimentally induced to maladies occurring as part of a constitutional condition.—*Med. Press.*

MEDICAL CHEMISTRY.

A NEW REAGENT FOR ALBUMIN.

A. Jaworowski proposes a new reagent for albumin which detects the presence of every part of albumin. (The other known reagents, as, for instance, Bodecker's, Millon's, acetic acid, and others do not detect even the *serum* part.) The reagent is prepared after the following formula: One part of molybdenate of ammonium is heated with 40 parts of water, and afterwards mixed with 5 parts of tartaric acid, when, if the liquid is not clear, it must be filtered. For examination, the urine must be transparent and acid; if it is necessary to acidify it, tartaric acid is used. For the complete removal of albumin from the urine, add a few drops of the reagent and filter it; after filtration, add the reagent again, and so on till a precipitate ceases to be thrown down. Too much reagent must not be used at once, because the excess may redissolve the albumin. By this reagent, also, a very small quantity of mucus may be detected.—*Wiadomosci Farmaceutyczne*, November 1, 1891.

A RESEARCH ON THE POISONOUS NATURE OF MOULDY RICE.

Dr. J. Sakaki, in the *Sei i-kwai Medical Journal*, reports the results of his study upon the action of mouldy rice. The research is particularly interesting because it has been thought by students of the disease known as *kakke* that mouldy rice was the cause. From the experiments which Sakaki has made upon frogs and rabbits, it would appear that the poison is capable of producing, in the case of the rabbit, dyspnea, rapid pulse, pupillary dilatation, and paralysis, the animal dying in convulsions in from three hours to forty-five minutes. In the frog it caused paralysis of the forelegs and loss

of reflex activity. Finally the batrachian was unable to recover its former position when placed on its back. Respiration became feeble and only very severe stimulus elicited any response.

THE FLUORESCENCE OF QUININE CONCEALED BY PHENACETIN.

From medico-legal investigations conducted by F. Sestini and R. Campani (*L'Orsi and Chem. News*), they have arrived at the following conclusions: The presence phenacetin conceals the fluorescence of sulphuric acid solutions of the cinchona alkaloids, especially when dilute. Aqueous solutions of phenacetin are colored yellow on the addition of chlorine water and ammonia, but mixtures of quinine and phenacetin are colored light-blue (methylenic blue).

NEWS AND MISCELLANY.

PARADOXICAL.

The *Scientific American* says that there is much truth in the remark of one who observed, "The worst thing about the grip is that you are sick with it so long after you get well."

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Will hold its Eighteenth Annual Session at Cincinnati, Wednesday, Thursday, and Friday, Oct. 12th, 13th and 14th, 1892. An excellent program, containing the best names in the valley and covering the entire field of medicine, will be presented. An address on Surgery will be delivered by Dr. Hunter McGuire, of Richmond, Va., President of the American Medical Association. An address on Medicine will be made by Dr. Hobart Amory Hare, Professor of Therapeutics and Clinical Medicine, Jefferson Medical College, Philadelphia. The social as well as the scientific part of the meeting will be of the highest order.

The Mississippi Valley Medical Association possesses one great advantage over similar bodies, in that its organic law is such that nothing can be discussed during the sessions save and except science. All ethical matters are referred, together with all extraordinary business, to appropriate committees—their decisions are final and

are accepted without discussion. The constitution and by-laws are comprehensive and at the same time simple. Precious time is not allowed the demagogue or the medical legislator. The officers of the Pan-American Medical Congress will hold a conference at the same time and place.

GALEN'S HYMN TO THE CREATOR.

In my opinion, true religion consists not so much in costly sacrifices and fragrant perfumes offered upon his altars, as in a thorough conviction impressed upon our own minds, and an endeavor to produce a similar impression upon the minds of others, of his unerring wisdom, his resistless power, and his all diffusive goodness. For his having arranged everything in that order and disposition which are best calculated to distribute his favors to all his works is a manifest proof of his goodness which calls loudly for our hymns and praises. His having found the means necessary for the establishment and preservation of this beautiful order and disposition is as incontestable a proof of his wisdom as his having done whatever he pleased is of his omnipotence.—*Pettigrew's Medical Biographies.*

DEATH OF PROF. MEYNERT.

The Vienna school has lost another of its most ardent workers this week in the death of Prof. Meynert. Rumor has been for several months past active in publishing different vague accounts of the professor's state of health, but few had any notion of the end being so near. Psychiatry had been his life study, and his memory will long be preserved in that department in connection with his labors in the anatomy and physiology of the brain. Every ramification of the University has passed a tribute in his memory.

Hofrath Nothnagel, before closing his *Klinikischen Vorlesung*, said that science as well as their own *alma mater* had suffered a severe loss in Meynert. The mention of the name instantly brought the whole class on their feet. It is surprising to a foreign eye the devout adoration and demonstrative formality a calamity like this excites! While all stood Nothnagel continued his eulogistic elegy on the immortal works of Prof. Meynert, who had built up a branch of knowledge unknown

to mankind before his labors began. Psychiatry before his time was a name without a meaning—a chaos with no hope of order being restored. About the end of last century and the beginning of the present the clinical symptomatology was scanty and ill-defined. It is true we owe the fundamental origin of psychiatry to Griesinger, but Meynert was the spirit that gave the department a new impetus. He said to the students, "your text-books on the anatomy and physiology of the brain to-day are very different to those when Meynert commenced his labors. His was a poetic conception, not a mere descriptive brain anatomist; he was a profound thinker that obtained results not in the usual manner step after step, but rather as Müller's description of the poets,

'Where confusion is greatest,
Order seems nearest.'

Meynert was a great admirer of Shakespeare, and poetry in general, which he cultivated in his leisure hours.

Mental diseases he divided into three large groups—1st, the old symptomatico-clinic group; 2nd, the anatomical; 3rd, the physiological-experimental.

Prof. Kahlar opened his lecture with the subject which he termed a "catastrophe," that one of the brightest luminaries of the University had set for ever. His efforts were towards elucidating the nerve centre in two directions—1st, in tracing the nerve fibres to their origin, and may be termed his anatomic labor. 2nd. His method of sectional series, or localization of the brain. To Meynert alone is due the credit of laying the foundation of this important section of modern knowledge.

Prof. Zuckerkandl said Meynert had opened a new epoch in the history of medicine, as to him is due the precise expression of symptoms for localization. His writings are numerous and varied, but his anatomy of the brain is sufficient to immortalize his name.

Profs. Krafft-Ebing, Toldt, Exner, etc., gave similar testimony of Meynert's worth. Exner said that Meynert had been accustomed for some time past to liken the brain to a large globular projection draped with a mantle of grey matter which reflected the outer world as a brilliant mirror, this mantle was populated with images and sensitive beings.—*Med. Press.*